

13. TIMELINE WITH BIOGRAPHICAL NOTES

- 1930 Parents Jean Nicolazzo and Frank Adiutori were married in Kane, PA. Mother born in Calabria, Italy in 1910, moved to USA in 1912. Father born in Renova, PA in 1907, moved to mountain village (Acuto) near Rome in 1908, moved to USA in 1923.
- 1931 Sister Josephine born in Erie, PA.
- 1932 I was born in Erie, PA.
- 1937-44 Attended public schools Washington Elementary and Perry Elementary in Erie, PA. Skipped second half of fifth grade.
- 1944-50 Attended Erie Academy Public High School.
- Caddied at the Erie Municipal golf course, bussed at several restaurants, was a helper/cleaner in the Ba Bee Bakery, did chores in the neighborhood such as mowing grass and shoveling snow, and painted house numbers on curbs.
- 1948 Tragedy. Father was killed in an auto accident, and Mother badly injured. (She made a full recovery in 3 months.)
- 1949 Worked evenings after school for six months as a timekeeper at Bucyrus-Erie in Erie, PA. (Said I was 18 even though I was 16.)
- Hitch-hiked around USA with friend Don Kenny for one month during summer vacation. Traveled 5200 miles from Erie to Duluth to Dallas to St. Petersburg to Washington, D.C. to Erie. Started with \$26 each. We never earned any money while on trip, and returned to Erie with pocket change.
- 1950 Graduated from Erie Academy Public High School in February. First in class of about 100.
- From February through August, worked at the Ruberoid Company as a loader on the production line, and as a lift truck operator.
- 1950-54 Attended Yale University on a scholastic scholarship. No charge for tuition; worked 12 to 14 hours/week for meals; was charged \$200 per year for room.
- Majored in chemical engineering. On the dean's list every semester except for the semester I learned to play bridge.

Principal extra-curricular activity was singing. Freshman Glee Club directed by Arthur Franz; Apollo Glee Club directed by Fenno Heath in Sophomore year, Yale Glee Club directed by Marshall Bartholemew (my favorite director) in Junior year. Did not sing Senior year.

Sang with St. Thomas More choir freshman year, and with the Battelle Memorial Chapel choir in my second and third years. (Undergraduate Yale was men only at that time, but the Battelle choir was coed.) The choir made the most beautiful a cappella music I have ever heard. Practice was twice a week, and members were paid \$3 a week.

During the first summer vacation, worked as a hod carrier and mortar mixer for Baldwin, Inc. in Erie, PA. Also traveled to California with Jack Hellwege in his 1937 Ford. Went to California to visit Jack Klein who had joined the navy and was shipping out.

During the second summer vacation, worked for several weeks at the Woodmont Country Club in Rockville, MD serving drinks around the swimming pool and doing general clean up. For the remainder of summer vacation, again worked for Baldwin, Inc.

During the third summer, worked for Dr. Finnholt at the GE plant in Erie, on a calendaring process to apply Teflon to armature windings.

Married Donna Elaine Mahood in August of 1953. We met when I was her mailman during a Christmas vacation. Honey-mooned in Niagara Falls. Have now been married 56 years, and still counting.

During my Senior year, Donna and I lived in a winterized cottage on Long Island Sound in Branford, CT. She worked full time as a billing clerk at Sargent Lock Co., and I worked part time as a spice mixer at Roessler's. Could not spare the time to sing in a glee club or choir.

Graduated from Yale University in 1954. Inducted into Tau Beta Pi (engineering equivalent of Phi Beta Kappa). Skipped graduation for monetary reasons.

Our first of six children was born in July, 1954, in Erie, PA.

1954-63 Employed by GE throughout this period.

The first year, I was an engineer-in-training on rotating, 3 month assignments. My assignments were at Electronics Park in Syracuse, NY, Aircraft Gas Turbines in Cincinnati, OH, at Coxsackie, NY (manufactured electric blankets for Nike missiles), and Knolls Atomic Power Laboratory

in Schenectady, NY (designed and tested nuclear reactors for naval vessels).

Employed by Knolls Atomic Power Laboratory in Schenectady, NY, from 1955 to March, 1963. Worked on heat transfer and fluid flow in nuclear reactors, half of the time in design and analysis, the other half in experimental research and development.

In 1957-58, under GE sponsorship, I attended the Oak Ridge School of Reactor Technology (6 months at Union College in Schenectady, NY, and 6 months at Oak Ridge, TN). During the one year program, I received full pay, all expenses paid for me and my family, and I had an unheard of six week vacation. When I graduated from ORSORT, I received a 25% increase in salary!

(I was initially rejected for ORSORT because the course administrators had reviewed the engineering curriculum at Yale, and concluded it was so inadequate that I was not qualified to take the course. (I was amazed to learn that Yale, a world class university, would have an inadequate curriculum in any major.) After my manager pressured the course administrators' management, I was conditionally accepted into the program, with the requirement that I take and pass remedial courses. I graduated from ORSORT with high grades, helped in large part by the remedial Math course I was required to take given by the excellent Professor Fox at Union College).

In 1962, I received a masters degree in mechanical engineering from Union College.

1963

I initiated a transfer to GE Space Power and Propulsion Systems in Cincinnati, OH. I greatly preferred work in experimental heat transfer, and the position at SPPS was on the cutting edge of heat transfer research. The position was Project Engineer in charge of an experimental boiling liquid metal heat transfer facility.

I worked at SPPS from March until August, was on unpaid leave until November, then resigned. I loved the work at SPPS, but resigned from GE because SPPS management would not allow me to correlate the data I had obtained in the manner I felt best, would not allow me to apply my analytical results and conclusions to the configuration and operation of the facility, forbade me from working on stability, and intended to publish some of my original work. My departure from GE was contentious.

Some time in late 1963, I conceived the new heat transfer and the new engineering, and began to write about them, hopefully for publication.

1964

Throughout most of 1964, I attempted to find employment as an engineer. After being rejected numerous times even though interviewers had told me I was a very good fit for their open position, I concluded that GE (my only employment reference) was giving me a very bad reference. I concluded that I would not be able to find employment as an engineer.

While I was unemployed, I submitted many articles for publication. So that my manuscripts would not have to indicate that the author was unemployed, I formed Stability Consultants (of which I was the President and sole worker). By a strange coincidence, the first potential customer was a department of GE that was planning to modify the GE aircraft nuclear reactor design for application to a maritime vessel. They had seen my *Nucleonics* article, and had concluded that I was the only person who understood stability in boilers, and they wanted me to be a consultant on their program. Unfortunately, Congress killed the program shortly after our initial contact. (See later.)

Of the many articles I submitted for publication in 1964, two were accepted and published. One was published in *Nucleonics*, the other in *British Chemical Engineering*. The *Nucleonics* article precipitated a storm of protest. (See [The storm of protest against “New Theory of Thermal Stability in Boiling Systems” published in *Nucleonics* in May of 1964, and my response.](#))

One of my articles had the rare and dubious honor of being accepted but *not* published. (See [My 1964 paper that was accepted for publication in the *AICHE Journal* \(but never published there\), and the amazing view expressed by Professor Rohsenow.](#))

Since I was unable to find employment as an engineer, I decided to go into the gas station business, even though I have little mechanical aptitude. Near the end of the year, I signed a lease agreement with Texaco, Inc., and intended to become a Texaco “man with a star”.

1964-66

Shortly after I signed the lease agreement, I was offered employment as a Belcan Corporation contract engineer assigned to the Aircraft Gas Turbine Department of GE in Cincinnati. I accepted the position, worked 65 hours a week at GE until mid 1966, and operated the gas station as an absentee operator. During this period, I was awarded two patents. The patent of which I am particularly proud is US Patent No. 3,542,486, impingement cooling of turbine vanes.

My GE management wanted me to become a direct employee of GE, but I declined because I planned to write and submit articles for publication, and I did not want to be required to get GE approval of my manuscripts. I resigned in the summer of 1966 because GE management would not allow

me to work part time, and I wished to resume working on publications that would flesh out the new engineering.

1967-72 During this period, I was a consultant to Diamond Power Specialty Corp., a subsidiary of Babcock and Wilcox, located in Lancaster, OH. I also leased several more Texaco gas stations, and continued to operate as an absentee operator.

I had been engaged by DPSC primarily to work on the thermal and hydraulic aspects of the control rod drive for the B&W nuclear reactor (Three Mile Island is a B&W reactor). My major tasks were to perform motion analyses of the control rod during a scram, and to direct the prototype testing that would measure the control rod as-built motion behavior during a scram.

I developed a method of measuring both the dynamic mechanical drag and the hydraulic drag of the control rod by analyzing the measured rod motion behavior during a scram. The method is described in the appendix of "A Mathematical Model of a Control Rod Drop" by Donis and Goller. See [Erratum that states that the appendix in "A Mathematical Model of a Control Rod Drop" by Donis and Goller, *Nuclear Engineering and Design*, 23 \(1972\) was taken from work I performed as a consultant to Babcock and Wilcox.](#)

The first B&W nuclear reactor was installed at a Duke power plant in the Carolinas. Prior to startup, each control rod was to be exercised individually to measure its motion behavior during a scram. Since I had been responsible for all rod motion analysis and testing, I expected to be sent to the reactor site, and to be responsible for overseeing the testing and analyzing the test results as they were obtained. Upon learning that I was not to be sent to the reactor site for monetary reasons, I to go *without fee* if DPSC would pay my expenses. DPSC would not pay my expenses, I was not sent to the reactor site, and the control rod testing was a *disaster*.

Sixteen control rods were damaged because water level in the reactor was not high enough to fill sixteen of the hydraulic snubbers designed to soften the landing at end of travel. If the rod motion data had been reviewed in the field by someone knowledgeable on rod motion, only one control rod would have been damaged because the hard landing would have been immediately detected, and the testing halted until the water level was increased to the required level.

After I had worked at DPSC for a time, I was asked to work on soot blowers for large fossil-fueled power plants, and shot cleaning systems for power plant heat exchangers. My specific task was to study their products in order to find ways of improving them.

I invented a simple, low-tech method of using soot blowers to measure the heat flux distribution throughout fossil-fueled power plants. (See [Patent 3,827,102](#).) It was the first time heat flux distribution data had been obtained throughout power plants greater than 40 feet across. (At the time, power plants as large as 120 feet across were in operation). Consequently, I was sent to five or six power plants around the country to apply the method to large fossil-fueled power plants.

I developed a low tech method of water-cooling a soot blower in which the flow rate of the cooling water is controlled so that most of the water is evaporated in the soot blower, leaving only a small amount of liquid water to be expelled from the blower. A field test of a prototype demonstrated the adequacy of the method. (See later.)

I also designed a new type of injector for the shot cleaning system that was much simpler and less costly than the injector that had been used for several decades. With the new type of injector installed, the shot flow rate more than doubled, as demonstrated by a prototype field-test. (See later.)

1972-77

During this period, I sometimes worked as a contract engineer. I had assignments at Allison in Indianapolis, Teledyne in Toledo, GE in Schenectady, and GE in Cincinnati.

When I was not working as a contract engineer, I wrote the three volumes of the first edition of *The New Heat Transfer*. (See [Narrative on writing and marketing *The New Heat Transfer*](#).) I typed the masters for the books on an IBM Selectric typewriter (the first erasing typewriter). I wrote every word, prepared and solved every problem, drew every sketch, prepared every chart, and designed the covers. In short, I did everything except print the 3 volumes. For that reason, I considered the first edition of *The New Heat Transfer* to be a work of art as well as a book of science. And since artists generally sign their work, my signature appears on the covers of all 3 volumes.

Ventuno Press was formed in 1974 to market my books. Ventuno means twenty-one in Italian, and it reflected my naïve expectation that the engineering would be globally accepted by the twenty-first century.

1977-1993

Throughout this period, I worked at GE Aircraft Gas Turbines in Cincinnati. With the exception of the first year, I worked in the heat transfer lab. Five patents were obtained in my name, three dealing with experimental methods in heat transfer, and two with the thermal design of high temperature components.

In 1989, I took 3 months of unpaid leave in order to write the second edition of *The New Heat Transfer*. I typed the manuscript using a word processor, and therefore I did not consider the book a work of art, and my signature does not appear on the cover. The book did not receive good reviews, and did not sell many copies.

This period is described in depth in (later).

- 1993-2000 Employed by Belcan Corporation and assigned to work on GE gas turbine products. Employed part time after 1998.
- 1998-2008 Relocated to Naples, FL to be near my oldest son who had been diagnosed with terminal brain cancer. Miraculously he survived, and lives a full and normal life.
- Worked part time for Belcan until 2000 when I retired. Continued working on the new engineering.
- 2002 *The New Engineering* was published. Only one review was highly favorable. Few books were sold.
- 2004-05 Wrote to ASME chapter presidents offering to speak on the new engineering at chapter meetings without fee or compensation for expenses.
- I was invited to speak, and did speak, at 21 chapter dinner meetings from Portland, OR to Palm Beach, FL. (See later.) Each meeting was a pleasurable experience for me. I was greatly surprised by the gifts and stipends I generally received. My talks always seemed to be well received, but . . .
- 2009 Relocated to Green Valley, AZ.