



College Mascot

## Thomas Caggiano Background

City College of Engineering  
Motto

Respice, Adspice, Prospice

Look back, look at, and look  
ahead



Secret Code



A creed to a joyful  
life.

*And so, my fellow Americans: ask not what your country can do for you—ask what you can do for your country.*

*My fellow citizens of the world: ask not what America will do for you, but what together we can do for the freedom of man.*

*Finally, whether you are citizens of America or citizens of the world, ask of us the same high standards of strength and sacrifice which we ask of you.*

*With a good conscience our only sure reward, with history the final judge of our deeds, let us go forth to lead the land we love, asking His blessing and His help, but knowing that here on earth God's work must truly be our own.*

---

Mr. Caggiano had a thirty year engineering career: supervisor and lead of teams of scientists and engineers. A senior program analyst and procurement specialist, international technical expert advisor to Corps of Engineers on major construction complexes and senior *Project Management Engineer* in the U.S. Army's Acquisition Corps.

Decades of experience in classified futuristic technologies, personal management, financial control systems, contacts, and computer systems.

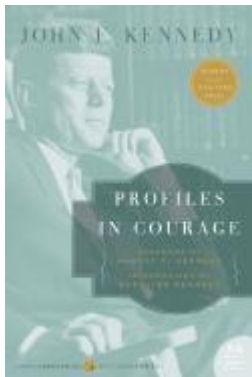
Bachelor's degree in Chemical Engineering from City College of New York with graduate engineering studies at Stevens Institute and Department of Defense Colleges - Total credits in excess of 200 credits with and additional 50 credits continuing education in symposiums, classified mathematical analysis, quantum physics, infinitesimal analysis and convergence theory, neural network theorems, free energy calculations Helmholtz (T+V), Gibbs (P + V), detonation velocity chemical reaction kinetics, advanced studies in transport phenomena laws: (0) transitivity of thermodynamic equilibrium (mechanical and chemical), (1) conservation of energy (shift symmetry of time), (2) entropy (logarithmic probability of available energy), and (3) absolute temperature of perfect crystalline substances.

*The second law of thermodynamics is, without a doubt, one of the most perfect laws in physics. Any reproducible violation of it, however small, would bring the discoverer great riches as well as a trip to Stockholm. The world's energy problems would be solved at one stroke. It is not possible to find any other law (except, perhaps, for super selection rules such as charge conservation) for which a proposed violation would bring more skepticism than this one. Not even Maxwell's laws of electricity or Newton's law of gravitation are so sacrosanct, for each has measurable corrections coming from quantum effects or general relativity. The law has caught the attention of poets and philosophers and has been called the greatest scientific achievement of the nineteenth century.*

## **Entropy**



**Ludwig Boltzmann**  
Mathematician



*Below I have added tools I used and provided internet links to allow you to learn skills using today's publically available computerized software with current mathematical approaches to aide you in your own workplace experience, improve product quality, increase productivity, improve your job growth opportunities, improve your professional skills, allow you to met challenges, improve your creativity and innovation, improve your job satisfaction and confidence and enable you to mentor others. Always set your goals extremely high and then do your very best to surpass them and fear no challenge. The joy of life is giving without earthly reward.*

Manager and engineer responsible for design and construction of large steam plants, administrative building construction, quality assurance labs, instrumentation, cooling towers, distillation columns, belt drying systems, batch and continuous centrifuges, tank farms, electrostatic precipitators, blast furnaces, electrolytic refining, vibratory and moving belt conveyors, pneumatic transport systems, automated weight and volumetric measuring technologies, endothermic and exothermic kilns, fluidized beds, vortex separator classifiers, pressure leaf dewatering systems, rotary drum filters, evaporators, heat exchangers of all types, pumps, computerized control systems, sumps, piping transfer systems, security fencing, paint, insulation, heating and cooling systems, roads, railroad terminals and tracks, environmental pollution abatement systems, decanters, reaction vessels, metallurgy specialist, blast wall design, safety expert, proportional-integral-derivative feed back and feed forward controllers and other technologies in structures, sewer systems and overall personal management, risk assessment analysis, budgets, appropriations

and disbursements, standing operating procedures, job descriptions and performance appraisal systems, contracts, [Work Breakdown Structure](#) analysis expert Mil Handbook 881A, and [Cost/Schedule Control System Criteria](#) expert.

Treasurer of local college chapter of the [American Institute of Chemical Engineers](#).

Simultaneously managed two national declared emergencies at once which required knowledge in all facets of engineering, technical scope of work preparation and contracting. One production complex required 1,200 construction workers. Lead teams of A&Es working four shifts, 24 hours a day, seven days a week both domestically and internationally. The completed facility excluding the large steam plant, water treatment plant, waste treatment facilities are shown below in a photograph taken in 1981.

I was provided Special "Strike Team" Leader status by a Four Star General and "Commander-in-Chief" authority through the Command Structure as the sole contract preparer, negotiator, engineering manager and all functional elements do to a critical National Emergency in time of war.

Thereafter, I continued in gaining further education, as I suggest you read, listen to others, change job functions, broaden into other career fields the better your understanding of the issues of others will be understood as "esoteric" language is used and you must understand "Their" language, their laws, their constraints so that you can REMOVE their constraints as in reality there are NO constraints for every law and regulation is always derived from the Constitution which allows you to assure the safety, tranquility of the people and no law can hinder your effort. If any lawyer, comptroller, supervisor states otherwise tell them to get a better education and get out of your way.

In everything you do: protect the victims. Protect the children. While there may be a temporary carnage in your life, your rewards may not be earthly but you will be full of joy simply knowing that you are doing the right thing. Never fear. Question all facts. Challenge any procedure. Change the law. It can be done by YOU. Fear no challenge.

- Always seek to broaden your job experience and become an expert or at least knowledgeable in other fields and Join their societies to gain education is the key. I became a Supervisor of an Engineering Group, Senior Level Program Analyst, Supervisor of a Policy Group of Engineers, Computer Specialist and Program Analysts, Policy Chief to 4,000 Engineers, Lawyers, Comptrollers, Senior Executive Service members, the Army Material Command, the Pentagon, Navy, Special Operations Forces, a Program Management Division Chief supervising Procurement Specialists, Program Analysts, Computer Experts and Engineers and three Project Manager Engineering Divisions, an Acquisition Business Manager directing a forty year Cost Analysis of a Major Classified Weapon system, and a Senior Level DOD Project Management Engineer with delegated authority of the Program Executive Officer.

---

- Former Member of the [American Society of Military Comptrollers](#)

- [Certified Facilitator](#) to aide others know more then 60 techiques to define a problem, brain storm alternatives, risk benefit analysis and over 50 techniques to assist team building and team planning, analysis, resolutions, decision making, implementation and iterative feed back - feed forward analysis techniques.
- [Conducted and Lead Hazards Analysis and Root Cause](#) probabilistic and deterministic analysis simulations with failure mechanism reliability of 1 in 1 million error rate, in all weather conditions from artic conditions, fog, snow, desert with a thirty year storage life.
- Provided expert guidance and managed teams using [stochastic processes and queing theory](#).
- Engineering Branch Chief supervised many engineers in multi-disciplines responsible for design, construction and operational prove-out of billions of dollars of manufacturing complexes.
- International Technical expert advisor to the [Corps of Engineers](#) on international and domestic projects, negotiated contracts and lead teams of engineers, scientists from academia, industry and Air Force, Navy, Marines and Army laboratories, NSA and [Research Development and Engineering and Testing Centers](#).
- Research, Development, Testing and Evaluation RDT&E Policy Chief responsible for preparation and guidance to four thousand engineers, scientist, procurement analysts, comptrollers, cost financial analysts, computer programmers, information management specialists and program analysts.
- Participated with the Pentagon in formulating regulations and changing any law that was an impediment to [acquisition streamlining development](#).
- Designed very sophisticated computer systems software requiring computer programs to prepare other computer programs in other languages based upon dynamic responses in using batched time sequenced operations using [Informix System Query Language](#), Fortran, C, Unix shell language, Cobal, and assembly language and developed very complex interactive software programs.

A modern software tool is [System 2000 \(Winner of IBM Beacon Award\) for Manufacturing and Shop Floor Control](#)).

- Developer [of project management software](#) to manage large complex manufacturing complex, elemental chemical process flow material balance models for analysis of major complexes having dozens of chemicals.
- Managed a major [environment impact assessment](#) with 26 outfalls, directed teams of nationally recognized experts as large as 120 PhDs and many other senior level multi-skilled engineers and scientists.
- Lead teams in failure mode analysis, classified seismic waves, acoustic waves, gravity waves, ultrasound, focused beam forming, magnetism, infrared, millimeter waves, ballistics, warhead design, cannon design functionality, small

arms, artillery, battlefield tactics, mission area planning analysis, Classified Military Operational Requirements Documents for military needs, fixed integer computer processors, general computer processes, extreme density high powered reserve batteries, [fuel cells](#), advanced sensors and computer algorithms.

- Program Management Division Chief responsible for providing guidance, mentoring and management for three Program Management Engineering Divisions, Material developer representative in negotiations with Pentagon Operational Requirements Group (DCSOPS), Training and Doctrine Group (TRADOC), Project Managers, RDT&E centers, Navy, Air Force, Marines, Special Operations Forces in classified manufacture, printed circuit board production and quality control, equipment design, methods and manufacturing techniques, training manuals, field manuals and battlefield strategy and assessments:
- [Monte Carlo Optimization](#) and Simulation techniques.
- [Taguchi Method noise factor design approach](#), manufacturing process flow analysis and statistical analysis.
- [Six Sigma statistical analysis control](#), quality control methods, personal training, standing operational procedures, worker and supervisor training, skill improvement and construction and all financial systems controls.
- Acquisition Business Manager for a Major Classified Weapon system in excess of a Billion dollars for system design through deployment and decommissioning
- Expert advisor for [classified C4I Command, Control, Communications, Computers and Intelligence](#) design and operational parameters, total finance control, scope of work approval, testing, classified manufacturing plant design, [System's Reliability, Maintainability, Availability and Through-put Analyses](#), construction and procurement.
- Managed and Lead teams in total life cycle [Open Systems Acquisition Process analysis](#) and Mil HDBK 881A Work Break Down Structure Analysis and covering 40 years from Basic research, Advanced Development, Full Scale Engineering, Design, Construction, Fielding, Storage, Use to Decommissioning using the sophisticated [Automated Cost Estimating Integrated Tools ACEIT](#) using advanced computer models for all [appropriations cost parametrics estimated](#) funding requirements on a world wide analysis.
- Very senior level Program Management Engineer with delegated powers of a Program Executive Officer in a Project Manager's Office and [Army Acquisition Corps](#) member *certified at Level III Program Management* for [full System Engineering Planning life cycle modeling and responsibility](#) for cradle to grave classified engineering, system design, computer design, ASCII chip design, classified warhead design, flight dynamics, classified manufacturing facility design, construction and operation, world wide integrated logistics systems using all modes of transportation, testing, training, deployment, fielding and decommissioning.
- Recent member of the [Soil Science Society of America](#). These peer reviewed

PhD advanced research published papers shows we have to get better criteria for such a degree as so many papers by teams of PhDs showed they haven't a clue of what *Entropy* is.



Leadership and technical support to our Active Army, Army Reserves, National Guard and others at:

- [National Training Center](#) at Ft. Irwin
- [Special Operations Command](#) at USSOCOM
- [U.S. Army Engineer School at the U.S. Army Maneuver Support Center](#)

The internet was created by the U.S. Army personal and its contractors *in 1962*.



*Below are some of the awards, the teams I had the honor and opportunity to lead were recognized for providing service to support our Nation's Defense and our allies around the world.*



U.S. Army Tank-automotive and Armaments Command  
Warren, Michigan 48397-5000

April 19, 2000

Office of the Commanding General

Dear Mr. Caggiano:

*Well Done!  
Thanks  
Howard*

It is indeed a pleasure to forward congratulatory comments from Major General Robert B. Flowers, Commandant, U.S. Army Engineer School, for the superior support you provided on the Modular Pack Mine System trainer (M136).

Your dedication, knowledge, initiative, and professionalism have made this program a success and provided valuable information on solving system training needs.

Congratulations and keep up the good work.

Sincerely,

Encl

*John S. Caldwell, Jr.*  
John S. Caldwell, Jr.  
Major General, U.S. Army  
Commanding

Mr. Thomas Caggiano  
Systems Acquisition and Life Cycle Management  
U.S. Army Tank-automotive and Armaments Command  
Picatinny Arsenal, New Jersey 07806-5000

### **Multiple Medallions**

Active Army  
National Guard  
Army Reserves

*National Training Center*  
*Ops Groups*  
*Sidewinders and Eagles*

The Major's identity who assisted me was S11. I got to sleep in the back of the Humvee! - *HOORAY*



**Below is a letter our team received from the Commandant of the Engineering School who was responsible for training all U.S. Army Active, Army Reserve and National Guard troops world wide.**





REPLY TO  
ATTENTION OF

## DEPARTMENT OF THE ARMY

UNITED STATES ARMY ENGINEER SCHOOL  
FORT LEONARD WOOD, MISSOURI 6473-6600

March 3, 2000

Office of the Commandant

Major General John S. Caldwell, Jr.  
Commander  
U.S. Army Tank, Automotive and  
Armaments Command  
Warren, Michigan 48397-5000

Dear General Caldwell:

I want to thank you for the superb assistance that one of your stellar performers, Mr. Thomas Caggiano of Picatinny Arsenal, has given the Engineer School on the Modular Pack Mine System (MOPMS) trainer (M136). This is a particularly important program for us, as the MOPMS is a command-detonated mine that is not prohibited by the Anti-Personnel Land Mine Ban, and may have a life cycle in the Total Army that exceeds currently projected Fiscal Year (FY) 2005.

In previous correspondence, I asked for TACOM support on the repair of our existing MOPMS trainers. Mr. Caggiano has taken on this mission with vigor, and his innovative solutions have been a great success. Through his efforts, low cost circuit boards and case repair procedures are in use. In addition, we are beginning to realize some trainer repair parts recycled after live MOPMS firings at Yuma Proving Grounds, Arizona. I would highly recommend that you capitalize on these initiatives, developed by Mr. Caggiano and his team, to continue to use the expended live munition parts to help alleviate the MOPMS trainer shortfall. Our recent success in refurbishing 14 trainers would not have been possible without Mr. Caggiano's personal involvement in this process.

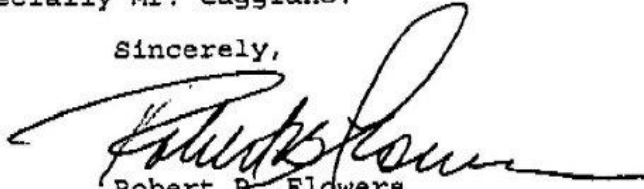
Mr. Caggiano has also offered up viable tips for the training devices, such as changing from a plastic case to a lower cost steel case as a method for "ruggedizing" the MOPMS trainer. The Fact Sheet at enclosure 1 provides a good overview of the effort the team put into solving our training needs. His team has also worked some super initiatives on Mine Effects Simulators (MES) in the MOPMS trainer and low cost alternative Volcano training rounds.

-2-

While all of the above goes a long way toward solving the training shortfall it does not completely alleviate it. I ask for your continued support for the MOPMS trainer procurement and repair. A cost estimate for re-procuring the additional 95 training systems we are short is at enclosure 2. Indications are that it may be possible to work to find the funding to support this within the RE01 MDEP.

Thanks again for the excellent support and conscientious work by your staff, especially Mr. Caggiano.

Sincerely,



Robert B. Flowers  
Major General, U.S. Army  
Commandant

2 Encls

**Below are some awards I received for leading large teams of government engineers, contractors and construction teams in Designing, building and operating large manufacturing complexes used by our forces and allies and also developed innovative project management software for scheduling, cost control and process manufacturing elemental analysis of dozens of compounds produced and involved in the highly complex manufacturing processes. These facility efforts were made under extremely difficult and emergency situations to met urgent National Defense needs.**



# DEPARTMENT OF THE ARMY

THOMAS J. CAGGIANO

## IS OFFICIALLY COMMENDED

### FOR

exceptional managerial talent and performance in the direction and execution of a highly complex, major \$104 million facility for the manufacture of Nitroguanidine, a critical, key material needed for the defense program. He developed new, novel, computerized management systems and techniques which have been highly effective in close management of financial and technical aspects of the project. This new system (PACER) is being applied to other complex, major projects. His astute management decisions, professional attitude and ability to work with all levels of authority reflect great credit on himself, the US Army and the Federal Service.

21 November 1980

A handwritten signature in cursive script, reading "William E. Eicher", written over a horizontal line.

WILLIAM E. EICHER  
Major General, USA  
Commanding  
US Army Armament Materiel Readiness Command

thomascaggiano.com

SOME BACKGROUND INFO


MEMBER  
MILITARY  
COMPTROLLER  
SOCIETY

TREASURER  
AMERICAN INSTITUTE  
OF CHEMICAL ENGR

AGE  
BUSINESS  
MANAGER  
ACAT II  
WEAPON  
SYSTEM

SPECIAL OPERATIONS FORCES  
SPECIAL CLASSIFICATION

200 COLLEGE CREDITS  
+ 50 CREDITS CLASSIFIED DOD COLLEGES  
1985



**Department of the Army**

THOMAS J. CAGGIANO

is recognized for

**Exceptional Performance**

as a General Engineer, [redacted], in the Propellants and Explosives Division, Explosives Branch, U.S. Army Production Base Modernization Activity, during the period 31 July 1984 through 16 June 1985. Mr. Caggiano orchestrated a successful proveout of a \$118 million nitroglycerine project at Sunflower Army Ammunition Plant by his ingenuity and dedication to solving technical and managerial aspects of the project and close coordination with AMCCOM, Corps of Engineers and Environmental Protection Agency. In addition, Mr. Caggiano served exceptionally as lead engineer for the restoration of nitroglycerin manufacturing efforts at Radford Army Ammunition Plant. He unselfishly worked many hours beyond the normal work week to assure all possible action under U.S. Army Production Base Modernization auspices were taken to meet extremely tight and critical schedules. Mr. Caggiano's performance reflects admirably on himself as a professional, on the Production Base Modernization Activity and the federal service.

CERTIFIED  
DOD A&C CORPS  
Proj Mgmt Engr Level III

SR. PROG ANALYST  
CHEMICAL ENGR  
INTERNATIONAL EXPERT  
TO CORPS OF  
ENGR

POLICY CHIEF TO 4,000  
ENGS, SES, LAWYERS

ENGR  
BRANCH  
CHIEF  
\$ Billions

Proj Mgmt  
DIV CHIEF  
Proj Mgmt

DELEGATED  
Prog Exec Authority

FRANCIS E. MULCAHEY  
Colonel, EN  
Commanding, U.S. Army  
Production Base Modernization Activity

STRIKE TEAM LEADER  
APPOINTED BY FOUR STAR GENERAL  
WITH POWERS OF COMMANDER-IN-CHIEF

DA FORM 1078, MAY 81

[Return to Investigation Report Index](#)

## Morales of Chess by Benjamin Franklin



In 1786, Franklin issued the first published chess writing in the US, an essay called "The Morals of Chess." Franklin argued in that essay that chess strengthens good habits useful in daily life. That argument was typical of Franklin, as he had argued in other writings that the secret of virtue was little more than the creation and maintenance of good habits.

The Game of Chess is not merely an idle amusement. Several very valuable qualities of the mind, useful in the course of human life, are to be acquired or strengthened by it, so as to become habits, ready on all occasions. For Life is a kind of Chess, in which we have often points to gain, and competitors or adversaries to contend with, and in which there is a vast variety of good and ill events, that are, in some degree, the

effects of prudence or the want of it. By playing at chess, then, we may learn,

**I. Foresight**, which looks a little into futurity, and considers the consequences that may attend an action ; for it is continually occurring to the player, "If I move this piece, what will be the advantages of my new situation? What use can my adversary make of it to annoy me?

What other moves can I make to support it, and to defend myself from his attacks?"

**II. Circumspection**, which surveys the whole chess-board, or scene of action, the relations of the several pieces and situations, the dangers they are respectively exposed to, the several possibilities of their aiding each other, the probabilities that the adversary may make this or that move, and attack this or the other piece ; and what different means can be used to avoid his stroke, or turn its consequences against him.

**III. Caution**, not to make our moves too hastily. This habit is best acquired by observing strictly the laws of the game, such as, "If you touch a piece, you must move it somewhere ; if you set it down, you must let it stand:" and it is therefore best that these rules should be observed, as the game thereby becomes more the image of human life, and particularly of war ; in which, if you have incautiously put yourself into a bad and dangerous position, you cannot obtain your enemy's leave to withdraw your troops, and place them more securely, but you must abide all the consequences of your rashness.

And, **lastly**, we learn by chess the habit of not being discouraged by present bad appearances in the state of our affairs, the habit of hoping for a favorable change , and that of persevering in the search of resources .

The game is so full of events, there is such a variety of turns in it, the fortune of it is so subject to sudden vicissitudes, and one so frequently, after contemplation, discovers the means of extricating one's self from a supposed insurmountable difficulty, that one is encouraged to continue the contest to the last, in hopes of victory by our own skill, or, at least, of giving a stale mate, by the negligence of our adversary. And whoever considers, what in chess he often sees instances of, that particular pieces of success are apt to produce presumption, and its consequent, inattention, by which more is afterwards lost than was gained by the preceding advantage, while misfortunes produce more care and attention, by which the loss may be recovered, will learn not to be too much discouraged by the present success of his adversary, nor to despair of final good fortune, upon every little check he receives in the pursuit of it, That we may, therefore, be induced more frequently to chuse this beneficial amusement, in preference to others which are not attended with the same advantages, every circumstance which may increase the pleasures of it should be regarded; and every action or word that is unfair, disrespectful, or that in any way may give uneasiness, should be avoided, as contrary to the immediate intention of both the players, which is, to pass the time agreeably.

Therefore, **firstly**: If it is agreed to play according to the strict rules, then those rules are to be exactly observed by both parties ; and should not be insisted on for one side, while deviated from by the other: for this is not equitable.

**Secondly**. If it is agreed not to observe the rules exactly, but one party demands

indulgences, he should then be as willing to allow them to the other.

**Thirdly.** No false move should ever be made to extricate yourself out of a difficulty, or to gain an advantage. There can be no pleasure in playing with a person once detected in such unfair practices.

**Fourthly.** If your adversary is long in playing, you ought not to hurry him, or express any uneasiness at his delay. You should not sing, nor whistle, nor look at your watch, nor take up a book to read, nor make a tapping with your feet on the floor, or with your fingers on the table, nor do any thing that may disturb his attention.

For all these things displease ; and they do not shew your skill in playing, but your craftiness or rudeness.

**Fifthly.** You ought not to endeavour to amuse and deceive your adversary, by pretending to have made bad moves, and saying you have now lost the game, in order to make him secure and careless, and inattentive to your schemes; for this is fraud, and deceit, not skill in the game.

**Sixthly.** You must not, when you have gained a victory, use any triumphing or insulting expression, nor show too much pleasure ; but endeavour to console your adversary, and make him less dissatisfied with himself by every kind and civil expression, that may be used with truth, such as, "You understand the game better than I, but you are a little inattentive ;" or, "You had the best of the game, but something happened to divert your thoughts, and that turned it in my favour."

**Seventhly.** If you are a spectator while others play, observe the most perfect silence: For if you give advice, you offend both parties ; him, against whom you give it, because it may cause the loss of his game; him, in whose favour you give it, because, though it be good, and he follows it, he loses the pleasure he might have had, if you had permitted him to think till it occurred to himself. Even after a move or moves, you must not, by replacing the pieces, show how it might have been played better: for that displeases, and may occasion disputes or doubts about their true situation. All talking to the players, lessens or diverts their attention, and is therefore displeasing: Nor should you give the least hint to either party, by any kind of noise or motion. If you do, you are unworthy to be a spectator.

If you have a mind to exercise or show your judgement, do it in playing your own game when you have an opportunity, not in criticising, or meddling with, or counselling the play of others.

**Lastly.** If the game is not to be played rigorously according to the rules above mentioned, *then moderate your desire of victory over your adversary*, and be pleased with one over yourself.

*Snatch not eagerly at every advantage offered by his unskillfulness or inattention; but point out to him kindly, that by such a move he places or leaves a piece in danger and unsupported; that by another he will put his king in a dangerous situation. By this generous civility (so opposite to the unfairness above forbidden) you may, indeed, happen to lose the game to your opponent, but you will win what is better, his esteem, his respect, and his affection; together with the silent approbation and good will of impartial spectators.*

[\*\*Return\*\*](#)