Writings of D.B. Steinman

By Way of Introduction . . .

David Bernard Steinman Founding President of NSPE

Born at the end of the last century to an immigrant laborer family in a blighted New York tenement neighborhood near the majestic Brooklyn Bridge, David Bernard Steinman resolved early to make his mark on the world. The Brooklyn Bridge was the outstanding engineering achievement of its era, and its engineers, the Roeblings, were heroic figures to young David. They had a profound influence on the boy who dreamed early on of becoming an engineer.

He started college at age 13 at the City College of New York and, eventually, through the aid of scholarships and part-time jobs, earned three degrees from Columbia University—A.M, C.E., and Ph.D. But upon graduation in 1921, he was unable to find a job. After three months of searching, a friend offered him a desk in an office at $10 a month, and he became a consulting engineer.

"My first fee was five dollars and for several months it was a difficult and discouraging struggle," he recalled years later. "Then Holton D. Robinson, who built the Manhattan and Williamsburg bridges, asked me to join him in a competition to build the Florianapolis Bridge in Brazil." The Florianapolis Bridge was hailed worldwide as a design success due in large measure to a revolutionary new form of suspension span designed by Steinman.

He ultimately became the world's foremost bridge designer, with hundreds of bridges on five continents. Among his spans: the Henry Hudson and Triborough Bridges in New York, the Mount Hope Bridge linking Providence and Newport, Rhode Island, the Mackinac Bridge in Michigan, and the Messina Straits Bridge linking Italy

with Sicily. What he considered his supreme accolade was being chosen to modernize the Brooklyn Bridge.

"A bridge is more than a thing of steel and stone: it is the fulfillment of human dreams to link together distant places. A bridge is more than a problem in stresses and strains: it is a challenge and an opportunity to create the beautiful."

Steinman was also one of the first to appreciate the concept that engineering is a profession. The principles of registration of engineers and the adoption of professional standards and ethics led eventually to his inviting the leaders of four state professional engineering societies—Connecticut, Pennsylvannia, New Jersey, and New York—to a meeting in May of 1934 to discuss forming a National Society of Professional Engineers. He worked tirelessly for nearly 30 years to build NSPE to the 55,000 members and 53 state societies that belonged to the society at the time of his death in 1960.

Also, a prolific writer, D.B. Steinman wrote dozens of articles on engineering registration and professionalism; a best selling biography of the Roeblings, The Builders of the Bridge*; and scores of poems. Presented here is a small selection of—The Writings of D.B. Steinman.*

NSPE 60th Anniversary
July 1994

Registration of Engineers—Objects and Advantages

*By D. B. Steinman—**1932***

The licensing or registration of Professional Engineers is now an established fact. Engineers' registration laws are now in force in 28 states, in which are located 80% of the Engineers of this country. The enforcement of these statutes is being progressively strengthened.

The objectives to be accomplished and the advantages to be gained through registration laws for Professional Engineers are as follows:

1. Restrict the right of practice to those who are properly qualified by education, experience, and character.
2. Eliminate the incompetent and the unworthy.
3. Protect the public against the incompetent, the quack, and the impostor.
4. Raise the educational standards of the Profession.
5. Establish the solidarity of the Profession.
6. Establish the legal status of the Profession.
7. Provide the only machinery for ousting a man from the Profession when he proves unworthy.
8. Protect the Profession from encroachment or discrimination by other legally established professions.
9. Protect the qualified Engineer in his investment of educational and professional training against the economic competition of the untrained or the half-trained.
10. Strengthen the recognized engineering colleges in their efforts to maintain high standards against the competition of schools giving inferior or abbreviated training.
11. Establish Engineering as a recognized learned profession.
12. Protect the designation "Engineer" against misappropriation and misuse.

13. Stop the many travesties on the designation "Engineer" which tend to create confusion and derogatory misconception in the public mind.
14. Provide legal enforcement for Codes of Ethics, with expulsion from practice as a penalty for violation.
15. Protect the rights of the Profession against outside attack.
16. Stop non-engineers from posing as Engineers.
17. Enable the true Engineer to stand out more clearly to command public confidence and respect.
18. Provide professional certification for expert testimony.
19. Familiarize engineers with legislation.
20. Familiarize legislators with the standing of the Engineering Profession and its scope of activity.
21. Improve the status of the Engineer in public recognition, understanding, and esteem.
22. Do for the Engineering Profession what the doctors and lawyers have succeeded in doing for their professions.
23. Provide a criterion for distinguishing the Engineer from the non-engineer.
24. Clarify public conception of Engineers and Engineering.
25. Provide a sound basis for organization of Engineers for united effort, with emphasis on unity, rather than differentiation, of interest.
26. Provide for interstate cooperation and reciprocity.
27. Increase professional self-respect.
28. Protect the Engineer against foreign discrimination.
29. Advertise the Engineering Profession and its high qualifications.
30. Establish order out of present chaos in respect to preparation for the Profession, engineering degrees and requirements for admission to technical societies.
31. Provide a basis for the coordinate qualification and certification of the young engineer for admission to practice, for award of the professional degree, and for admission to technical societies.

32. Provide the prospective Engineer with a definite program of education and apprenticeship to guide him in preparation for admission to the profession.
33. Place Engineering on a par with Law and Medicine as legally restricted and recognized learned professions.
34. Secure for the Engineering Profession its rightful place in public recognition and esteem.
35. Secure for the individual Engineer more adequate opportunities, recognition and recompense for his high services to society.

The Engineer

*By D. B. Steinman—**1932***

He is the master of the Laws of Nature. On a sound foundation of mathematics, science, and economics, he bends the materials and forces of Nature to his plan and rears the structure of civilization.

With vision, resourcefulness, and ingenuity, he labors to increase the comfort, wealth, and safety of his fellowmen.

He attacks his problems with the vision of the pioneer, the integrity of the scientist, the accuracy of the mathematician, the practicality of the business man, the resourcefulness of the inventor, and the courage of the conqueror. He is the planner and builder. He builds his visions into enduring realities.

He is the pathfinder of civilization. He breaks down barriers, bridges chasms, establishes communication, and straightens the way for commerce and human progress.

He is the protagonist of efficiency. He reduces effort, eliminates waste, and increases production.

He is the creator of a Nation's wealth. He drains the swamps, reclaims the deserts, develops resources, and harnesses power. He builds the machinery of industry, the wheels of commerce, and the structure of business.

He is the great coordinator. He plans and directs the construction of projects representing the investment of millions of dollars and involving the labor of thousands of men.

He investigates with open mind, and gets the facts before he makes decisions. He plans with thoroughness and builds with fidelity.

To his rich heritage from the labors of past generations of engineers and scientists, he adds his contributions. He continues the work of forcing outward the challenging barriers that separate Man's efforts from the impossible.

Creation—An Allegory

*By D. B. Steinman—**1932***

Four men stood up with God when he made the World. They saw the nebulous mass take form under the hand of the Creator, and they watched with wonder as the shimmering sphere, flung from the fingers of Omnipotence, found its place in the shining galaxy of stars.

Blinded by the sublime spectacle, the men fell down in humble worship. And God said to them: "Rise, and fear not." And they rose and faced the Master with the new-born questions and ambitions that fired their souls. And one of the men asked: "How was it done ?" And God replied: "Go, find out for yourself." And that man went and became the scientist.

"Give it to me," the second man begged. And God said to him: "Go, possess it for yourself." And he went and became the Business Man.

"How beautiful!" exclaimed the third man. To him God said: "You shall go and, because your soul burns within you, you shall create Beauty!" And that man went and became the artist.

The fourth man said nothing but, as his eyes followed the unfolding of the plan of Creation, there kindled in his heart a desire to do these things. And to him God said:

"You too shall go, and you shall plan and build. You shall learn to master the forces I have called forth, and you shall continue the work of Creation!" And that man went and became the Engineer!

And thus this noble group of God's Journeymen set out upon their appointed tasks. The Engineer ran before the others to straighten the path for their feet. He blazed the trail through trackless forest and impregnable jungle, over jagged mountains and across torrential streams. He cleared away obstacles, broke down barriers, and spanned the chasms that halted their progress. He explored the far places and the depths of the Earth for the materials the Journeymen needed, and he fashioned the tools for their work. He devised shelters to protect them from the elements, and he built workshops for their labors. He mastered the elemental forces of Air, Earth, Fire, and Water,

and he harnessed these to lighten the toil of Man. With head and heart and hand, he wrought and contrived to ease the tasks of his fellow Journeymen and to multiply the fruits of their labors.

The others leaned heavily upon the Engineer when the going was rough. He crystallized their visions and gave fruition to their efforts. He labored and delved for the Scientist, and harnessed his magic to ways of usefulness. He helped the Business Man find new Wealth, and with it he created the structure of industry and commerce. He furnished new materials and tools to the Artist, and made his dreams of beauty materialize in imperishable form.

With the Truths discovered by the Scientist, the Wealth garnered by the Business Man, and the Beauty dreamed by the Artist, the Engineer performed ever greater miracles—rearing the resplendent structure of Civilization and Human Progress.

* * *

And thus the Engineer goes on through the ages—overcoming obstacles. conquering new forces, and reshaping the physical world. Unsparing of his energy, he plans and toils to create comfort, wealth and happiness for his fellow-wayfarers. He is the pioneer and the leader in the onward march of Civilization.

With the successful achievement of each new monumental task, the Engineer has grown in strength, and greater responsibilities and talents have been entrusted to him. Today he has to be Scientist, Artist and Business Man, as well as Engineer. All four are now embodied in him and find expression in his creative genius. He works from vision to deed, and he applies Science and Business and Art in building his dreams into enduring realities. He plans and builds not only for his time, but for the generations to follow.

Truly, the Engineer is God's journeyman, continuing the work of Creation.

Protection of the Term "Engineer"

Why Our Professional Designation Should be Restricted

*By D. B. Steinman—**1932***

Excerpted from a two-part series of articles appearing in Professional Engineer *magazine in 1932 and 1933.*

This is an appeal to all members and friends of the Engineering Profession to recognize the importance of protecting the designation "Engineers" against misappropriation, and to give thought and effort to the practical problem of accomplishing this objective. The present article is an attempt to outline the necessity for such program, and subsequent articles in this series will deal with ways and means of carrying the program effectively forward.

The individual Engineer has invested many years of his life in professional education and ardous professional training in order to qualify as an "Engineer." The Profession is investing decades of united effort to win public recogition and esteem for those who bear the title "Engineer." All of this investment is largely nullified if the use of the term "Engineer" is left unprotected.

So long as the plumber, the radio mechanic, the insurance agent, the truckman, the fumigator, and others may freely appropriate the designation "Engineer," the effort to secure unique public appreciation of the Engineer is thwarted.

The dignity and respect that rightfully belong to the designation of a learned profession cannot be maintained when that designation is abused by indiscriminate misappropriation.

No other learned profession tolerates the unauthorized appropriation of its professional designation.

So long as any non-engineer may with impunity call himself an "Engineer," prefixing any random adjective (such as efficiency, domestic, sales, social, exterminating, amusement, radio, plumbing, real estate, decorating, etc.), the ignorant and the prejudiced will retain an excuse to charge that Engineering is not a profession but merely a heterogeneous agglomeration of nondescript specialties.

The term "Engineer" becomes meaningless, or an object of ridicule rather than respect.

The public judges a profession by the example it meets. When the public sees men who are unlettered and untrained holding themselves out as "Engineers," respect for the engineering profession is weakened or destroyed. When the public sees the word "Engineer'- on the shop window of a plumber, an electrician, a radio dealer, or an automobile mechanic, a wrong picture of the engineering profession is implanted.

Through abuse and misappropriation, the term "Engineer" has been so weakened that many do not distinguish between a mechanic and an Engineer. Many self-styled "Automotive Engineers" are little more than automobile mechanics, and but few who adopt the designation "Heating Engineer" know anything of engineering. A corporation manufacturing radio equipment, wishing to flatter its dealers and servicemen, has advertised them as "Radio Service Engineers." Few so-called "Radio Engineers," "Refrigerating Engineers," "Ventilating Engineers," "Welding Engineers," etc., are really Engineers. So long as these technicians and mechanics can freely adopt the engineering designation, the general public has no way of making the distinction.

The profession has suffered in prestige and public confidence from the multiplicity of cults, fads, and quacks operating under the engineering title. Self-styled "Efficiency Engineers," "Social Engineers," "Investment Engineers," "Personnel Engineers," "Human Engineers" and the like have pressed their services upon a non-discriminating public; and when the accomplishments of these pseudo-engineers have failed to measure up to their self-salesmanship, lasting prejudices against "Engineers" have been created.

A firm of interior decorators in New York was found advertising as "Furnishing and Decorating Engineers." When challenged by the writer, they explained that they had previously used the description "Furnishing and Decorating Architects," but the architectural profession had objected, whereupon the firm had changed the term to "Engineers," since they "did not imagine that the engineering profession would mind."

Many adopt the designation "Engineer" because the term has acquired the popular connotation of "Expert" or "Specialist." These offenders, as a rule, have no conception of what Engineering really is.

Our wagon may look attractive to these hosts of uninvited "hitch-hikers," but they render impossible any real progress toward our goal.

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All members of the engineering profession are "Engineers." They have studied "Engineering," and they practice "Engineering" They are known to the public and to the profession as "Engineers." This professional designation is their bond of solidarity. Adjectives may mark differentiation into specialties or fields of practice, but the word "Engineer" unites all into a single profession. As the only designation that all members of the profession have in common, it should be protected from misappropriation and abuse.

A Creed

Cardinal Principles of NSPE. Twenty-five Tenets of Guidance Attention Especially Directed to No. 25

By D. B. Steinman—***1936***

We are members of the National Society of Professional Engineers because we believe in the following principles to which it is dedicated:

1. *Engineering is a Profession.* As members of that Profession, it is our moral obligation to strive for its advancement.
2. Engineering is a *learned* Profession. The highest educational prequalifications must be maintained for admission.
3. Engineering is *one* Profession. It should be held legally indivisible, and any move to divide it must be opposed.
4. *Before it can expect recognition, a Profession must be recognizable.* A clear dividing line must be established whereby the public may distinguish the Engineer from the non-Engineer.
5. *Registration is the only means of establishing this demarcation.* Without Registration Laws, there is no way to stop the practice of Engineering and the appropriation of the designation Engineer by the unqualified and the unprofessional
6. *Registration establishes Engineering as a legally defined and recognizable Profession.* It places the force and sanction of the law behind the efforts and aspirations of the Profession to maintain high standards of qualifications and practice.
7. *Registration is the most important agency for the advancement of the Profession, its standards and its standing.* Registration has been used effectively by other Professionals as a powerful instrumentality for raising educational qualifications, ethical standards, professional status, and public recognition. Every effort should be devoted to extend Engineers' Registration legislation to the remaining States, and to improve existing Registration Laws to a uniform high standard.

8. *Protection of the Professional designation is as important as protection of practice.* A Profession is judged by the qualifications of all who use its name, and the public is confused and misled by the misappropriation of the title.
9. In any State in which an Engineers' Registration Law is established, *no man is an Engineer unless he is registered.* Existing exemptions in Registration Laws permit non-engineers, under certain conditions, to do engineering work, but such exemptions do not make any man an Engineer.
10. *The only agency that can admit a man into the Engineering Profession is the legally authorized State Board.* This responsibility cannot be delegated nor shared.
11. *No college can admit a man into the Engineering Profession by conferring a degree.* Additional qualifications are required for Professional status.
12. *Membership in an Engineering Society does not make a man an Engineer.* He should be an Engineer before he is admitted to membership. The National Society of Professional Engineers is the only organization in which all of the members are Engineers.
13. In addition to being defined, *a Profession must be integrated.* Technical societies are organized on the basis of *dividing* the Profession into branches and specialties. The National Society of Professional Engineers is organized on the principle of uniting all Engineers as members of one Profession.
14. The technical problems of Civil, Mechanical, Electrical, Chemical and Mining Engineers are divergent, but the Professional problems are alike. The National Society of Professional Engineers supplies the need of a nationwide *Professional* organization devoted to the common interests and aspirations of *all* Engineers. It is organized to do for the Engineering Profession what the Medical Association and the Bar Association have done for their respective Professions in increasing prestige, legal protection, public confidence, and professional recognition.

15. For handling local problems of legislation and public relations, *the State Society, with its County Chapters, has been demonstrated to be the most effective form of Professional organization.*
16. For mutual inspiration, increased effectiveness, and national accomplishment, the State Societies of Professional Engineers need to be united in a national organization. *The National Society of Professional Engineers is the established means for welding together the State Societies in united purpose, effort and achievement, and for extending the professional program on a national scale.*
17. *The Engineering Profession needs to be defined, organized, and integrated.* It is defined by Engineers' Registration Laws. It is organized in the National Society of Professional Engineers, its State Societies, and its County Chapters. It is integrated by perfecting the interlocking of the National, State, and County units so that every member of one shall be a member of all.
18. *Every man is a debtor to his Profession.* The National Society of Professional Engineers, with its State Societies, is consecrated to fostering the ideals and the traditions of the Engineering Profession, to stimulating public service within the Profession, to guarding high standards of professional honor, and to conserving and strengthening public confidence and esteem. Through membership and active participation in this organization, the individual Engineer renders his contribution toward making Engineering a greater, nobler, and more satisfying Profession than he found it.
19. *The most effective and enduring contributions to individual welfare are to be attained through cooperative efforts for the advancement of the Profession as a whole.* The National Society of Professional Engineers, with its State Societies, provides the medium for collective effort for the advancement of the Profession in public service and in public esteem.

20. *The most far-reaching benefit to our Profession and to all of its members lies in increasing the appreciation and respect of the general public for our Profession.* Our most important activity is in the field of Public Relations. We must bring home to the public, through the press, the radio, public assemblies and publications, the high qualifications of the Engineer, his Professional status, and the outstanding value and supreme importance of his service to modern civilization and human progress.
21. *The Engineering profession and other legally established Professions have problems of mutual interest in legislation and in public service.* The National Society of Professional Engineers, through its Committee on Professional Relations is establishing cooperative relations with other Professions.
22. *The Engineering Profession does not seek to interfere with the established rights of practice of any other legally recognized Profession.* At the same time, we have firmly recorded the principle that *we will not allow any other Profession to restrict the rights of practice of the Engineer.*
23. *In legislation, initiative and vigilance are the price of progress.* The National Society of Professional Engineers, through its National and State Committees on Legislation, is guarding and advancing the interests of the Profession and of the Public as affected by legislation.
24. *The Engineer is primarily a citizen.* The National Society of Professional Engineers is dedicated to stimulating public service within the Profession, and to impressing upon the public the high qualifications and availability of the Engineer to serve as a citizen in civic councils, planning boards, legislative bodies, and public office.
25. *Membership in a Profession involves a professional obligation and a public trust. It is therefore our guiding purpose to place service before profit, the honor and standing of the Profession before personal advantage, and the public welfare above all other considerations.*

New Emblem

1948

The new emblem was conceived by Dr. D. B. Steinman and was worked out by several members of the NYSSPE and the NJSPE working jointly. Prior to the Board of Directors action in Buffalo, the seal had been adopted for public relations use by the New York and New Jersey Societies. Its significance is explained in the following paragraphs.

By Dr. D.B. Steinman

A satisfactory emblem design must be simple, symbolic, and distinctive. The symbolism must be appropriate to the entire engineering profession and not merely to any particular division of the profession.

The design here presented consists of a circle (representing a wheel) framing an integral sign and the letters P and E. It is simple; it is symbolic; it is distinctive.

The most significant element of the design is the *integral sign.* It symbolizes mathematics—the working tool of the engineer and the foundation of the engineering method—typifying careful analysis, sound reasoning, scientific rigor, accuracy, and precision. It also symbolizes integration—the dominant characteristic of the work of the engineer. The engineer takes the elements of nature, the component materials and forces of nature, and integrates them, combining them to new and useful functions. The primary function of the engineer is not to break down or destroy, but to build, to construct, to unite, to integrate.

Moreover the integral sign denotes the integration of the profession, the uniting of all the divisions, branches and specialties into a single integrated profession. Integral means whole. The integral is

the emblem for the whole profession, the symbol of solidarity and of strength.

The characteristic of being integral is integrity. Integrity is the essential characteristic of the engineer and integrity is the essential characteristic of the works he builds.

Flanking the integral sign and united by it are the letters P and E, standing for the Professional Engineer. P stands for concentrated force, for potential and power; E stands for elasticity, electromotive force, energy. These are familiar symbols to the engineer, representing the forces and elements with which he works. P also stands for the Profession, and the potential power of the Profession; while E stands for the Engineer, and the effort, earnest endeavor, and energy of the Engineer. E has also come into accepted use as the symbol and reward for excellence; likewise it stands for economy and efficiency. Efficiency, economy, and excellence are the dominant guiding objects in the work of the Engineer.

The integral sign framed between the letters P and E suggests a mathematical relationship. It can be read as "P is the integral of E," to remind us that the Profession is the integration of all Engineers and of their united effort. It can also be read as "P times the integral of E," to remind us that the sum of the individual contributions of Engineers is multiplied by the power of the Profession united in concerted effort.

For those who may wish to use the design as an organization emblem, it may be pointed out that the integral sign is, by origin, a long S, denoting summation. The combination of the integral sign with the letters P and E may therefore be read as a monogram representing the Society of Professional Engineers." The S also signifies strength, soundness, safety, the scientific methods, and service to society.

The design is framed in a circle, the perfect curve. The *circle* has no beginning and no end, and is alike in all its parts. It is the symbol of strength, of unity, of equality, of the things that endure.

The circle in this case also represents the *wheel.* The wheel was the first great mechanical invention, and is therefore a fitting symbol of engineering discovery and progress. The wheels of industry and the

power that drives them are the works of the engineer. The wheel is likewise the symbol of transportation, and this too is created and powered by the engineer. And it is the engineer who plans and builds the structure that houses the wheels of industry, and the roads and structures that carry the wheels of transportation.

Furthermore, the wheel is the symbol of the dynamic, as distinguished from the static. It is the symbol of power, of useful effort, of labor-saving, and of progress.

The design also indicates the spokes of the wheel. The spokes join the segments of the circle to a common center, representing unity. All branches and activities of the profession are united to a single central core. The circle is a symbol of universality, of the universe conquered and of the world united; and the radiating spokes symbolize the manifold functions of the engineer radiating in all directions to serve the whole world and to benefit all mankind.

There is the emblem: An integration of all Engineers—the Profession founded on mathematical science—the Profession that integrates, that builds, that creates the wheels of progress, serving and benefiting all mankind.

(Editor's Note: The emblem referred to here was adopted by NSPE in 1948 as a second insignia for use in public relations and other purposes. In 1991, NSPE adopted a new official insignia, which was an updated version of Dr. Steinman's, original creation.)

The Story Behind Registration

*By D. B. Steinman—**1949***

(*Excerpted from an article appearing in the May 1949* American Engineer.)

Modern civilization has found it necessary to regulate the practices of persons whose activities deal with the protection of human life, human health, human rights and human property.

Three professions—medicine, law, and engineering—are primarily entrusted with the responsibility incident to such activities. The elimination and exclusion, as matters of public welfare, of the dishonest and unqualified from the practice of these professions are undebatable tenets.

Engineers' registration is required for the protection of the public. The work of no other profession more truly concerns the safety of life, health and property. Being fully conversant with the problems involved, we want to have a hand in writing the law, in securing its enactment, and in directing its administration—as a recognition of our responsibility as a profession to the public.

The public needs to be protected against the quack, the incompetent, the unscrupulous, and the imposter, who do not belong in our profession but nevertheless practice in its name. The investor needs to be protected against "engineering" reports by the unqualified and the unscrupulous. The client needs to be protected against paying fees to quacks and incompetents who hold themselves out as "engineers." The courts need to be protected against the testimony of "experts" who pose as members of our profession. The public needs to be protected against improper planning, inefficient design, wasteful execution, and excessive cost also against dishonorable dealings. Mere structural adequacy is not the only desideratum.

Protection of the public is the legislative justification and establishes constitutionality. Protection of the profession, its standing and its standards, is a concomitant benefit. The two benefits are inseparable. The elimination of the unqualified and the unworthy benefits both the public and the profession.

Engineers registration laws derive their primary justification from considerations of public safety and the protection of public interest; but they are also necessary for the protection of the good name of the profession and its standing in public confidence.

A profession is judged by the qualifications of all who use its name, by the failures of the incompetents and by the conduct of the unworthy, unless a clear dividing line is established in public recognition between the lawful practitioners of the profession and those who are not admitted to practice. A Profession should be empowered to disown those who hold themselves out as belonging to it without proper qualifications or character and to bar the unfit and the unprincipled who seek to practice in its name. The public expects a trusted profession to maintain high standards of qualifications and to clear its ranks of those who do not meet those standards and whose pretensions and activities would degrade its good name.

Without registration laws, there is no way: 1) to stop the practice of engineering by the non-engineer; 2) to stop the misappropriation and abuse of the designation "engineer"; 3) to oust from the profession those who prove incompetent and unworthy; 4) to preserve to the qualified engineer his rights of practice against restriction, encroachment, and unqualified competition.

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Our profession has taken the position that we do not seek to interfere with the rights of practice of any other profession, but at the same time we have firmly recorded the principle that we will not allow any other profession to restrict the rights of practice of the engineer. We have had our battles on that issue and the victory has been won.

In different states, legislation sponsored by architects would have eliminated or subordinated the engineer in the structural field; physicians endeavored to monopolize the sanitary field; accountants sought to exclude others from the making of financial reports; lawyers sponsored legislation which would have deprived engineers of the right to prepare contract documents and to engage in arbitration proceedings; real-estate brokers endeavored to monopolize the right to make appraisals. Such legislation has been consistently and successfully opposed by our profession.

Registration—A Dream Come True

*By D. B. Steinman—**1949***

(From a speech delivered to the National Council of State Boards of Engineering Examiners, November 11, 1949)

In the audience before me I see many of the pioneers and leaders in the Engineers' Registration movement. For them, for all of us, for the entire profession, Engineers' Registration is a dream come true.

Because we had the vision, because we believed, heart and soul, in Engineers' Registration, because we were convinced that this movement represented an indispensable forward step of progress for our profession, we consecrated ourselves to this cause and dedicated to it our best energies and talents. We had to overcome complacency and disparagement, prejudice and misunderstanding, vested interest and selfish obstruction, secret opposition and open antagonism. Through 30 years of heart-breaking strain, we had to fight and battle for every step of progress. We had to pour out our energies and exert our best forces of logic and persuasion to convince the profession and the public—legislators, the public officials, and our own fellow engineers in state after state—before we could secure acceptance of the principle and the enactment of the desired legislation. And because we were willing to give to this campaign all of our strength and devotion in unsparing measure, without counting the sacrifice and the cost, our cause has won, and our dream has come true.

The full story of the 30 years battle will never be told. Future generations of engineers will not know the fight we fought for them in order to lay the foundation for a defined, united and recognized profession. Even our own contemporaries know little of the struggles, the heartaches, the sacrifices, the battles that were the price of achievement. We, who fought the fight carry away the scars of battle. Our sole driving force was an inner sense of conviction, a spirit of professional dedication. Through the strain and the heartache, the sole heartening feature was in the wonderful teamwork developed among brother engineers united by the same inspiration, sharing unselfishly and devotedly in sacrifice, in effort, and in zeal for a consecrated ideal. And our sole reward has been in seeing the progressive achievement of our objective to final accomplishment.

On NSPE's 25th Anniversary

From American Engineer, *July 1959*

In an emotion-filled address, Dr. Steinman, the founder and first president of NSPE, described the gathering as "dream come true."

"Twenty-five years ago, in 1934, all of this was only a dream. I dreamed of a national organization of, by, and for all engineers—a national organization dedicated to a great cause, a defined, integrated and unified engineering profession.

" . . . When I look about me today and see the visible consummation of my dream, I am overwhelmed with emotion, with the blessed feeling that my life has not been in vain."

At times wiping tears from his eyes, Dr. Steinman recounted his efforts in establishing the Society in 1934 and leading it through its early years.

"Now, looking back across the span of twenty-five years, we can view the results of our vision and sacrifice with a deep glow of satisfaction," he said. "The National Society, started in 1934 with only four young state societies and 400 local chapters, with 4,000 committees, all working for the advancement of the engineering profession in public recognition and esteem.

" . . . Our dream has come true. We have achieved public and legislative recognition that engineering is a profession, that engineering is a learned profession, that engineering is one profession.

"Moreover we have reminded the world that engineering is founded on great ideals—the ideals of vision, character, integrity and service to humanity.

"Whether or not our dedicated part in this achievement will be forgotten, matters little. What counts, in my mind and in my heart, is that this accomplishment for the advancement of our beloved profession will endure. Our work will live after us. We are building not for ourselves, but for posterity.

. . . For those of us who have known the struggles and the hardships of engineering in the lean and difficult years, there is deep satisfaction in knowing that we have done our part in making engineering a finer, nobler, and more satisfying profession for those who come after us," he continued.

Selected Poems of D.B. Steinman

After being proclaimed "the poet who writes in steel," Dr. Steinman decided, in the last few years of his life, to begin writing his poetry with pen and ink. He subsequently wrote scores of poems (many employing a bridge metaphor) that appeared in such diverse publications as the New York Times *and the* Poetry Society of America Anthology. *Following is a small selection of the poems of D. B. Steinman.*

The Song of the Bridge

With hammer-clang on steel and rock
I sing the song of men who build.
With strength defying storm and shock
I sing a hymn of dreams fulfilled.

I lift my span above the tide
And stand where wind and wave caress.
I bear the load so men may ride
On rainbow road to happiness.

The light gleams on my strands and bars
In glory when the sun goes down.
I lift a net to hold the stars
And wear the sunset as my crown.

Spans

Our lives are spans. With spark divine
We carry forward God's design.
Toward dignity and freedom's light,
Each span helps others scale the height.
In slow ascent from primal fears

Man builds his dream for future years—
A bridge transcending space and time,
A glimplse of destiny sublime.
Inspired by goal perceived afar,
Man builds the bridge from ape to star.

Blueprint

He saw it clearly and clairvoyant bright:
Twin granite pylons of majestic rise,
Founded on rock beneath the water swirl;

The lofty cables, spun of cold-drawn steel,
Cutting the sky in parabolic arcs—
A lyric pattern etched against the blue.

The spell of Euclid sang in his design:
The wizardry of radiating stays,
A geometric web to hold the stars;
The titan uplift of the singing strands;
High Gothic portals framed in stone—all these
He traced in blueprint, accurate as truth.

This magic he had made, though in the end
He did not live to see the caissons down.
The shadow of a fear that builders know
Was myth made real:'A bridge demands a life.'
He paid the toll, the world his legatee:
His work, his dream, bridging the span of death.

The Challenge

Nature said: "You cannot."
Man replied: "I can."
From shore to shore, above the tides
He built a gleaming span.

Nature said: "You dare not."
Man replied: "I dare."
He launched his winged ship aloft
And boldly sailed the air.

Nature said: "You shall not."
Man replied: "I will."
He caged the thunderbolts of Jove
And made them serve his skill.

Nature said: "You must not."
Man replied: "I must."
He split the atom. Now he holds
A godlike power in trust.

I Built a Bridge

I built a bridge across the tide
To reach a long-dreamed goal;
And there, beside a woodland stream,
God's peace restored my soul.

I built a bridge across a vale
To reach a flower-strewn slope;
My plan was traced as sunbeams wove
A rainbow arch of hope.

I built a bridge across a gulf
To reach my fellow man;
With heart aglow he came halfway
And helped me build the span.

I built a bridge across the years
To reach tranquility:
I did not know how beautiful
The last of life could be.

I built a bridge across the dark
To reach the unknown shore,
And there I found supernal love
And peace forevermore.

The Harp

Five stories high above a city street
He dwelt, a child with wonder in his eyes.
For him, through winter cold and summer heat,
The sunbeams danced and stars sang lullabies.

One day as if on wings, a stranger came
And stood within the room, unheralded.
Gently he spoke, calling the boy by name:
"David, play on your harp!" he softly said.

How did the stranger guess the secret dream
That, day and night, within the child's heart burned?
Outside the window, in the sunset gleam,
Glittered the instrument for which he yearned:

A bridge! The cables swung across the bay,
The strands that hummed like harp-strings murmuring,
They wispered to the child, "Some day . . Some day . ."
"There is my harp, sir. I can hear it sing!"