ChE educator

A New Mold

JOHN McKETTA

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To those who know him, John J. McKetta is a hard man to place. Just when one thinks he has this man figured out, some new facet of McKetta's character literally bursts forth in a rush of action. Most likely the acquaintance is left bemused, fascinated, and often as not, doubting that he really does know him.

Those who do not know him, should. John McKetta possibly holds more positions than any engineer today which affect both industry and education. According to the records, he is the only man who concurrently has been on the Boards of Directors for the ECPD, the EJC, and the ECAC and ECRC of the American Society for Engineering Education (ASEE). These positions converged during 1967-68-69.

Add to them the chairmanship of the 18-state Southern Interstate Nuclear Board (1967-68), the chairmanship of the Texas Atomic Energy Advisory Committee (since 1964), the advisory boards of at least a dozen major periodicals, plus committees in several professional societies, and the span of his interests begins to unfold.

But John McKetta is not a "joiner." Far from it. He belongs to these organizations because his professional concerns lie in their areas; and he has served them in many working capacities because there is no such thing in his makeup as passive involvement.

Nor do these activities constitute a new role. Back in 1962, when he was president of the AIChE, he already had been a national director of AIChE for five years. As president, his career was just 16 years out of college.

He still serves on four AIChE national committees. The same kind of working participation

is found in his past and present positions in the American Chemical Society (ACS), American Institute of Mining, Metallurgy, and Petroleum Engineers (AIME), and the American Gas Association. In perspective, McKetta's credentials do not reveal the true man. Actually, they enable him to meet important persons—and that is where the action is.

One may fairly inquire about the real motivations of this man whose 23-year career continues its three-dimensional expansion, whose quiet voice is listened to wherever he is, who still is almost a generation away from retirement. Put simply, John McKetta is dedicated to engineering education. Examining a detailed list of his organizational positions, one finds that most of his activities have been centered around some aspect of education.

Going deeper, in face of his many interests (he travels more than 100,000 miles a year), it has been said that John McKetta sometimes also is the Dean of Engineering at The University of Texas in Austin. That's unfair. A majority of his trips are to see educators at other colleges, to exchange ideas, to lay plans for future engineering education. Along the way he may visit industrial leaders, accept gifts or other support for

Beginning September '69 Dr. McKetta became Executive Vice Chancellor for Academic Affairs for The University of Texas System. Presently, the academic affairs of four universities are under his direction with plans for two new universities in the near future. — Editor.

UT's Engineering Foundation, convince someone's high-schooler or a graduate student to come to Texas, or recruit new faculty members.

Underlying these travels is Dean McKetta's firm conviction that industry and engineering education must have the closest possible ties. It makes sense, because industry is the chief customer and beneficiary of the college's graduates. In turn, industry provides a lion's share of scholarships and Foundation funds, those extras which spell the difference between an ordinary school and a great one.

The industrial-educational relationship extends deeply into the affairs of the college. During peak recruiting periods, McKetta has coffee in his conference room every morning with company representatives. Industrialists make up the boards of visitors to the departments.

McKetta himself has been a catalyst in broadening the scope of the Engineering Foundation Advisory Council's role from one of raising funds and monitoring expenditures, to include comprehensive studies of curricula, facilities, and guidance on future trends in education. The Council, incidentally, includes the heads and top executives of some of the largest firms in the country. Meeting three times a year, an observer would think this group of 20 was the board of directors of a corporation. He wouldn't be able to single out John McKetta from the others.

That's where McKetta unintentionally fools a lot of people. A broad-shouldered man of medium height, his build tells of work as a youth in Pennsylvania coal mines; his stance suggests a fighter (he was a regional Golden Gloves welterweight champion); his rolling gait could only be that of a man of intense drive. Dressed stylishly, brief cases in hand, fellow airline passengers take him for a successful business man as he studies papers enroute. They'd never know differently, even if they struck up a conversation with him about business.

Although he doesn't "look like a dean" or a traditional academician, he is equally at home among educators. He discusses educational problems with an insight matched by few; only his incisive way of cutting through red tape and fuzzy notions to go directly to the crux of a matter reveals the unique brand of practical logic for which he is noted.

McKetta's ability to bring industry and education to the table in objective harmony perhaps is best illustrated in his leadership of an unusual organization of several years' standing but no official status whatever. The body is made up of the deans of the 12 public and private engineering schools in Texas, and 12 industrial leaders. It is called "The Council of Engineering Deans and Their Industrial Counterparts."

About three years ago the Coordinating Board of the Texas College and University System turned to this group for help in designing a master plan for education in the state. Meeting irregularly at such times as the two dozen busy men could get together, in November, 1968 they submitted "An Advisory Report on Engineering Education in Texas" that well may become a classic guideline for other states.

McKetta can only be viewed as an entrepreneur. UT's College of Engineering has been noted since 1964 for its pioneering efforts to improve the teaching effectiveness of its faculty. McKetta certainly didn't invent the idea of better teaching (that undoubtedly predates Socrates, Plato, and Aristotle), but he must be numbered among a tiny handful of contemporary educators who saw a need and actually did something about it. The result has been a change in attitudes in the college, a marked improvement in rapport and teacher-student relationships, and measurable improvements in student motivation as well as learning.

So rewarding have been the outcomes, in fact, that McKetta felt justified in working for two years on the powers that be to scrounge, beg, argue, and twist arms for resources with which to establish a Bureau of Engineering Teaching, complete with a full-time PhD engineering teacher-director. Opening its doors last fall, insofar as is known, it is the only office of its kind in the nation.

It may be a sad commentary, but a textbook on educating engineering teachers at college level has yet to be written. Dean McKetta and his staff are on the way to writing their own textbook. Being planned right now is a special school in the college specifically for making professors out of engineers.

In October, 1966, at the opening meeting of the year's series of faculty meetings on teaching effectiveness, McKetta voiced something that was, and is, both a philosophy and a policy:

"WHEN ONE ACCEPTS a position as a university faculty member, he should expect to write proposals for research, equipment, and special projects; to publish articles, reports, papers, and books; to keep up-to-date in his professional field; to serve on councils, boards, and committees; to maintain the best possible relations with alumni, legislators, and the business and industry of the region—in short, to be a responsible member of the community and to participate in many of its activities.

"BUT WE ALL KNOW that these many activities must never overshadow our greatest concern—the student. If our responsibilities to, and concern for, the student ever become secondary, we will be violating the trust we accepted when we joined the faculty."

This statement was made prior to the breakout of turmoil on campuses across the nation. As in so many instances, McKetta again was early, and dead on target. It is not with foolhardiness, but with confidence, that he encourages his 3,200 students to have a healthy discontent and to constructively inquire into the "why" of things both social and technical.

John McKetta conforms to his own philosophy. Everyone in the college must teach; there are no full-time research positions on the faculty. He has been a teacher at Texas since 1946. His teaching load had to change when he was chairman of the Chemical Engineering Department in 1950-52, and again in 1955-63. As dean of the college since 1963, he has managed to continue work with five or six graduate students, and in some semesters to teach a course.

Just before the fall term opens, McKetta and his department chairman annually meet for two and a half days at some pleasant, secluded lake inn or ranch in the hill country west of Austin, to discuss ideas, problems, and plans for the coming year. Once a chairman commented, "This seems like a retreat." "Heck, no," McKetta retorted, "it's an advance!" Chairman's Advance it became, and continues so.

At last count, McKetta's published papers were approaching 170, mostly on chemical engineering. He has been author, co-author, or editor on 16 books, and is on publishers' advisory boards for several standard reference works. This past October 1969 the AIChE gave McKetta the Warren K. Lewis Award for Excellence in Chemical Engineering.

Although little time is left for hobbies, McKetta does have one relaxing passion. When his faculty is with him on group trips, given a spare evening, he wants to play poker. Mad poker. Wild poker: duces wild, one-eyed jacks wild, baseball, hairpin, spit-in-the-ocean. Just for fun.

Dean McKetta greets new faculty member Dr. William G. Lesso. All incoming faculty members are given a special orientation program, with emphasis on better teaching.

This man from Pennsylvania, via Tri-State College in Indiana (BS, Honorary DE, Distinguished Alumnus, Board of Regents), and University of Michigan (BSE, MS, PhD, Distinguished Alumnus, Honorary Sesquicentennial Award 1967), has come a long way. He has a long way yet to go.

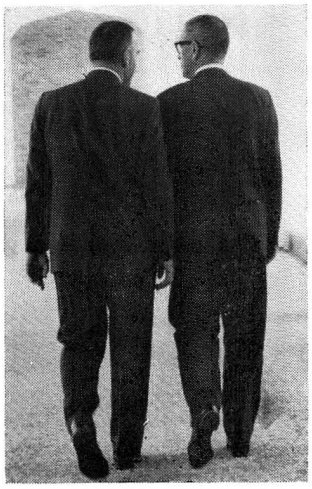
It seems that the mark of Texas is upon him. He loves its people, its industry, its climate, its frontiers, its problems, its opportunities. John McKetta swears he has orange blood (UT's colors are orange and white).

He'll prove it, too. He often wears an orange tie, or one with a Longhorn on it. In a platform, or at a party, he is likely to unbutton his coat and show its orange lining, to the surprise and delight of everyone.

A couple of years ago he acquired a deluxe home pool table for visitors. After it was set up in the game room of his lakeside home, he had the green felt covering removed and a Darrel Royal (football) Burnt Orange cover put on. Pool on an orange table, anybody?

He is Johnny to intimates and elder statesmen. To his faculty, he is John or the Dean.

Early this year, Joe J. King, Houston business man and engineer, offered a gift to the University for establishing an engineering professorship in his name. Joe had one condition, though: " . . . provided Johnny McKetta is named the first recipient." The UT System Board of Regents agreed.



Deans McKetta and Amstead, in a quiet moment, discuss plans, make decisions, and ponder new problems.

Chemical engineers, those who probably have known John McKetta longest and best, should have no fears that he has deserted or grown away from them. Addressing a South Texas Section, AIChE meeting late in 1967, his opening remarks were:

"I have taken pride in being a member of AIChE for many years. It is a special honor to be allowed to speak to you today.

"You know, as a dean of engineering responsible for educating thousands of young men and women to take their places in the profession, my interests must be as diverse as all the broad fields of engineering. But it is always refreshing to come back home and rub elbows with men in chemical engineering, my first love and the field with which I have a permanent romance. . ."

John McKetta's multiplicity of activities defines the man, but it still leaves him hard to categorize. Above all, he is an individualist and his own man.

He fits no traditional mold. He is a new mold, a new kind of leader, intent on producing a new breed of young engineers with a deep sense of social relevancy, strengthening the initiatives of both education and industry, and developing the knowledge and talents of the finest young persons ever to seek an education.

These are not impossible goals for a man like John McKetta.

ChE book reviews

Conservation of Mass Energy
J. C. Whitwell and R. K. Toner
Blaisdell Publishing Co., (1969), 496 pp.
Waltham, Mass.

The authors have produced a challenging book for students taking their first course in chemical engineering. The introductory chapter describing the function of the chemical engineer in industrial practice is well done and could serve as a model for informing high school students about the field of chemical engineering.

Their approach to the problem of unit conversion is not the traditional unit equation and conversion factor method but is heuristic. The intent being to get the student to think.

The section on independent balances and variables in the material balance chapter is considerably more advanced than usually found in texts at this level, making use of Amundsen's matrix method for determining the number of components in a system. A supplement to the chapter on material balances treats in detail the degrees of freedom available in process specification.

The chapter on transients covering both time and position dependent processes may be too advanced for the average student at this level. It may be appropriate to skip the position dependent transient, delaying this material until it occurs in the treatment of stagwise and continuous contactors in subsequent courses. A later section deals with transients associated with heat transfer operations.

The section of the book dealing with energy balances is less satisfactory than the preceding sections. Many topics are brought up and then dropped as being beyond the scope of the text. The explanation of the kinetic energy term in the overall energy balance is not very satisfactory.

Phase diagrams and enthalpy concentration diagrams are not mentioned. This seems unfortunate in view of their usefulness in tying together material and energy balances.

The text is adequately supplied with worked out example problems. There are a large number of problems for student use following each chapter. These are graded in difficulty and in addition a group of problems in each chapter has extraneous data supplied. Hopefully these problems will encourage the student to think before starting the problem solution.

Edgar V. Collins, Jr.
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