

Pennsylvania Survey Of Continuing Engineer Education

Engineers are finding it tough to keep pace with the swiftly-moving current of knowledge flowing from universities, government and industry.

Two thousand Pennsylvania engineers, in answer to a detailed survey on continuing education, claim that engineers need further and continuing study in the basic sciences and mathematics, in new techniques and the use of new tools, in the updating of communication skills, and in management.

The study has been summarized in an 80-page report by Drs. Samuel S. Dubin, a psychologist, and H. LeRoy Marlow, a management educator, of The Pennsylvania State University.

Only working engineers who obtained a B.S. degree in engineering prior to 1959 were surveyed. The 2,090 who answered the survey represented 20 types of engineers from large and small industries throughout Pennsylvania in an attempt to randomize the results to best represent the attitudes of engineers in general.

Engineers do not necessarily want college credit courses, the Penn State professors found. What they really want are informational courses and seminars, meetings and communications which will help them improve their professional skills. Engineers are now forced to rely heavily on scientific and technical journals for updating.

The study outlined special recommendations for universities, companies, professional societies, government and

the individual engineers to help in the updating process:

"The university should assume a leadership role" by "an expanded program of credit offerings in the basic sciences," by offering "courses of instruction in the engineering sciences, especially . . . where high demand has been demonstrated," with particular emphasis on "all phases of computer sciences and their scientific and engineering applications to business and industry," and by adding offerings in management, finance, technical writing, social sciences and humanities, and particularly in English, the report points out.

"Management (of companies), to be creative, should initiate and foster the updating of its employees," the report suggests. "This process requires a three-pronged attack: (1) personal motivation of the individual employee, (2) the strong support and encouragement of supervisory personnel, and (3) company policy which insists on updating its personnel as a part of the daily work.

"Professional societies, in conjunction with universities, should seek to motivate engineers to pursue continuing professional education," the engineers said. "Engineers should be encouraged to become active in their professional societies in order to keep abreast of current technical developments as reported in the literature and professional meetings . . .

"Policies of the state government should foster updating by: (1) periodic reviews, (2) providing educational as-

sistance for employees, (3) initiating and financing long-range educational programs, (4) granting released time to engineers to take advanced degrees and noncredit work.

"The engineer has a responsibility to himself and to his company to undertake continuing professional education to keep abreast of current developments in his field," the report stated.

Engineers realize their educational shortcomings in many fields, according to the report.

Of the 2,090 engineers surveyed, 58 per cent wanted to enroll in noncredit courses if offered locally, while 55 per cent wanted to enroll locally in advanced credit courses.

Six of the engineers were working on an additional B.S. degree, 93 were working toward a master's degree, and 12 were working toward a doctorate. Only four per cent said the reason for the ad-

vanced training was for promotion or salary increase.

"It seems clear that practicing engineers themselves recognize the need for further study," Dr. Merritt A. Williamson, Dean of the College of Engineering at Penn State, said about the survey results. "Financial means must be found to prepare and to offer up-to-date instruction in the selected fields where the demand is widespread if we are to make the best use of our professional personnel in the technological and managerial areas," he said.

The study was made possible through the cooperation of 171 companies, including four State government departments.

Complete or abbreviated reports are available from Dr. S. S. Dubin, Continuing Education, The Pennsylvania State University, University Park, Pa., 16802.

Book Reviews

SAMUEL B. MAGILL, Editor

HOW TO SUCCEED IN COMPANY POLITICS — THE STRATEGY OF EXECUTIVE SUCCESS

by Edward J. Hegarty

McGraw-Hill Book Company,
New York

\$5.95

279 pp.

Reviewed by ALAN H. MASTER
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"Good luck and God bless you," Hegarty's concluding remark, is but one key to the strategy of executive success.

Careful attention to the illustrative examples documented throughout this book, though not guaranteeing a promotion to that long-sought vice presidency, should better enable one to guide employees through the corporate political maze, thus laying the groundwork for improving management development programs.

Internal political chaos often leads talented personnel to seek employment elsewhere, with personnel turnover continuing unchecked despite technical and supervisory training programs. Hegarty indicates considerable improvement would result if young talent was intro-

duced to the fine art of company politics. This does not mean advising the aspiring supervisor to emulate his superiors by eating at the same restaurants, golfing at the same country club, or obtaining membership in the same church. These all help, of course, but it takes hard work as well.

The strategy of executive success is predicated upon one's ability to suitably perform his work. Only then can Hegarty's theories concerning job performance, advancement, and "How To Check On What To Do" have meaningful application. Unless, of course, you happen to be the man, who upon his promotion from stock-boy to manager, said to the company president, "Thanks, dad."

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INDUSTRIAL SAFETY

Third Edition

by Roland P. Blake

Prentice-Hall, Inc., Publishers

\$10.60 Pub. 1963 405 pp.

As safety directors know, Roland Blake's book on Industrial Safety is one of the "must read" books in this field. The author was long-time head of technical development for the U. S. Bureau of Safety Standards and a member of the group which organized the National Safety Council. Blake performed an active role in safety for over fifty years.

Now, in this new edition, some sections pertaining to obsolete practices in industry have been removed, and new chapters, like the one on radiation hazards, have been added. A large portion of the new work was written by M. A. Gimbel, who is credited with producing nine of the thirty-one chapters.

The supplementary bodies associated with safety practices are listed and their work is described. A chapter is devoted to the famous Z-16 of the American Standards Association which gives the standard classification of accident factors.

It must be noted that this book does not go into automobile driving accidents in any detail, but confines itself to hazards found in manufacturing and process plants.

One sees a tendency towards garrulity and inexactness in some of the sections and it may be wondered whether safety officers as a class do not need to be concerned about a tendency towards wordiness. So much of their work consists of preaching that some of them get the habit. Also, as a comprehensive text, the book tells of many ways to accomplish results, but fails to give specific recommendations on which is the one best way.

In contrast with many overlong chapters, the section devoted to training covers just seven pages. There is a perplexing reference here to chapter twenty-four in which additional information is promised. But this is chapter twenty-four!

One is accustomed to hearing some book or compilation being referred to as the "Bible" of that particular endeavor. In safety practice, this designation would, of course, be reserved for the *Accident Prevention Manual* of the National Safety Council. But Blake is one of the next two or three books to come to mind as being the word of authority and of comprehensive scope on this subject, so that it deserves a prominent place on every safety director's bookshelf.

S. B. M.