

by Professor W. E. BRITTON

Those Ten Hours of English

An engineering English professor here at Michigan presents the department's views on the East Hall courses required of all engineering undergrads.

The English program in the College of Engineering is best understood in the light of current developments in the Engineering profession.

One of our recent graduates told me last spring, as we sat at lunch in his plant, that he blessed his days at Michigan because he had been grounded in fundamentals rather than applications, and that the superiority of this type of education became apparent the moment he was thrust among men of superficial training.

Those who urge that engineering colleges devote themselves to specialized training may be thinking of their own interests while overlooking the needs of the individual and the profession at large. Although the line between fundamental and applied science may often be obscure in engineering, the engineer who pursues his interests too narrowly may eventually be handicapped by this very specialization when he joins a profession that daily grows more diverse and increasingly demands flexibility of its personnel.

The Engineering College of the University of Michigan has consistently sought to educate its men and women in a broad program of fundamentals and to avoid the hazards of overspecialization. In whatever post a graduating engineer subsequently finds himself some adjustment will be required; but that adjustment will be simplified considerably if his training has been broad rather than narrow, deep rather than shallow.

The Michigan tradition is effectively symbolized in Dean Mortimer E. Cooley's generous endowment of the annual contest that seeks to extend the undergrad-

uate engineer's understanding by directing his attention into fields beyond his area of concentration. This view is also apparent in the current practice of cutting across departmental lines in the formulation of meaningful engineering programs, especially in the recently developed curriculum of Science Engineering.

One phase of this broadening and deepening program is the work of the



English department, which has consistently adhered to the philosophy that its task is to educate the student primarily as a literate, even a cultivated, human being who is preparing for a career in science and engineering. In the ten hours of English taken by the majority of engineering students—six hours from Group I, two from Group II, and two from Group III—the attention is directed to three important areas: writing, reading, and speaking. I shall discuss these in order.

The notable interest in technical writing that has emerged in the past few years did not originate in the schools and col-

leges but sprang from business, and the professions. Such large organizations as The Association of Writers and Editors, now international, and The American Medical Writers Association, with their full and busy programs are evidence of what is occurring in response to the unprecedented demand for technical writers—Sperry Gyralone alone employs over three hundred technical writers, all of whom are engineers or scientists—Rensselaer Polytechnic Institute has introduced a program of technical writing leading to a Master's degree, and several schools, including Rensselaer and Pennsylvania, now conduct technical writing institutes.

Unfortunately, such activity creates the impression that technical and scientific writing is unique, and unlike the ordinary writing taught in schools and colleges. The view is evident in expressions such as Business English and Engineering English. Such terms are unfortunate because they are inaccurate. One might speak of Dental English or School of Natural Resources English.

Anyone acquainted with technical writing and with the programs of colleges and institutes devoted to the subject knows that the emphasis there rests on the qualities sought in a freshman English course: clarity, efficiency, precision, and logic.

This is not to say that all writing is a single type. Reginald O. Kaplan's splendid little volume *The Present State of Technical Information*, draws a clear distinction between *imaginative* and *informational* writing. The first is the language of the novelist, the poet, the drama-



Webster Earl Britton is Professor of English in the College of Engineering at the University. Degrees conferred upon him are: A.B., Randolph-Macon College; A.M., Syracuse University; and Ph.D., University of Michigan. Besides being actively engaged in campus organizations and committees, Professor Britton has done a great deal of textbook and publication writing. He is a member of Phi Beta Kappa, Modern Language Association, Michigan Academy of Science, Arts, and Letters, and The Augustan Reprising Society.

its purpose is to control the reader's emotions. The second is the language in which the affairs of men are conducted. It is the language of science, commerce, government, education—in fact, most writing belongs in this category. Its purpose is to control the reader's mind.

Technical writing is unique more by reason of its subject matter than its style. It does avoid, of course, the illustrations and implications regularly employed by its more powerful counterpart, imaginative writing. Functional writing produces great reporting, imaginative writing great literature.

The English department is sometimes asked why more of its program is not devoted to report writing and to technical literature. The Department certainly recognizes the significance and importance of the technical report in all aspects of modern science. And the report certainly is not ignored in the Department. We simply believe that the engineer's writing should not be confined to any one form. If a graduating engineer could be sure that he would never be called upon to write anything but reports, there would be some grounds for focusing the writing on this form. But the kinds of positions that Michigan engineers will occupy require a diversity of communication skills. A young engineer in the industrial course I taught last spring had been with his company less than a year, yet within a period of three short weeks he had had to cope with the following writing assignments: a technical report on a laboratory investigation he had conducted; countless letters to customers, many of whom were neither scientists nor engineers, regarding market

ing and manufacturing problems; and a company approval paper which he had to read before the New York meeting of a management society.

This engineer had to shift readily from one style to another, from detached, objective reporting to a personal manner that would instill confidence in a disturbed customer or impress a high level management group. To meet these demands required much more than skill in technical writing. And the higher an engineer rises in his profession the more varied become these demands upon his ability to communicate.

Accordingly, the English department, taking its cue from other programs in the College, has followed the policy of emphasizing the general rather than the particular, of stressing the fundamentals of clear, efficient exposition which can be applied to the variety of writing requirements the engineer will face. Writing about technical matters is rarely easy, but the task should be more readily accomplished if the writer has been grounded in the nature of language, the mechanics of expression, and the elements of structure and logic.

It should be noted, nevertheless, that although most of the writing in Group I courses is general theme writing, the program does include the study of the technical report, in addition to a limited amount of work in letter writing. Group II includes a course in the technical and scientific article, and Group III offers the course in report writing. Actually, therefore, a student could concentrate in composition, both general and specialized, if he followed English 11 and 12 with 35

and 136.

The other half of the question leads us into the second area of the English program, which is reading. What should an undergraduate engineer read and why?

Every English course has a subject and a technique, but sometimes the two are not properly differentiated in the mind of an observer. The subject matter of English 56, for example, is the short story, but the technique is devoted to teaching the student not how to write short stories, but how to read them with understanding and appreciation. The short story form is in some respects, incidental; it just happens to be the mold in which the writer chose to cast his ideas.

The substance of a course should have the qualities of both a teething ring and food. As a teething ring it must be tough enough to exercise the bite; as food it must be substantial and nourishing to promote growth. The subject matter of the English course is of both varieties: it exercises the student's mind and sensibilities at the same time that it provides the substance for emotional and intellectual development. In the essays in Group I courses, the freshman engineer wrestles with the exposition and analysis of countless modern problems that complicate our lives. In the courses in imaginative literature, he encounters the artist's sensitive interpretation of life. He becomes aware of what imaginative writing can do that is denied to functional writing. He develops the power to delight in reading, in the grace and beauty of fine literature. He encounters great and significant ideas, and, most important of all, perhaps, en-

(Continued on page 64)

An FTL "First"— TACAN

(Tactical Air Navigation)



REVOLUTIONARY AIR NAVIGATION SYSTEM EXEMPLIFIES CREATIVE, CHALLENGING ASSIGNMENTS AWAITING YOU AT FTL

TACAN, new bearing and distance navigation system for military aircraft, is only one of many major developments pioneered by Federal Telecommunication Laboratories.

Our long-range program is diversified and inspiring... offering unlimited opportunities for achievement and rapid professional recognition.

If you have the background and ability you will advance quickly at FTL... where facilities are the finest... where leadership is dynamic, cooperative.

You'll enjoy FTL's "small-company" project system... plus working "in the country," but only *minutes* from New York City. Look ahead... write today for the unique FTL-IT&T story.

EAST COAST ASSIGNMENTS INCLUDE:

Radio Communication Systems

Traveling Wave Tubes

Electronic Countermeasures

Air Navigation Systems

Antennas • Missile Guidance

Transistors and other Semiconductor Devices

Computers • Telephone and

Wire Transmission Systems

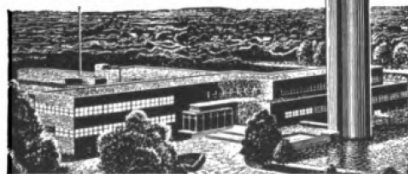
Opportunities for relaxed living and career-building also at FTL's West Coast Laboratories: San Fernando, Cal., 15151 Bledsoe St.—openings in Digital Computers, Inertial Navigation Systems and Infra Red Systems. Palo Alto, Cal., 937 Commercial St.—openings in Carrier Systems.

FTL



**Federal Telecommunication
Laboratories**

A Division of International Telephone
and Telegraph Corporation
500 Washington Ave., Nutley, N. J.
28 minutes via bus from N. Y. C.



East Coast Laboratory and Microwave Tower

Those Ten Hours of English

(Continued from page 21)

riches his thinking with some notion of the values and purposes to which man's activities are directed. If this aim—and we hope a fair portion is actually achieved—is not a fitting part of an engineer's education, then we have no answer to the question, why not devote the English courses to technical literature?

Nevertheless, another qualification is in order. Because the Department feels that in general the student's reading should be humane, especially in view of his contact with scientific literature in all his other courses, it does not follow that we are opposed to the reading of scientific literature. Just as the Department does not exclude technical writing but deems it advisable to include both technical and non-technical, so in the substance of courses, the Department believes that it is proper to include non-imaginative reading but not to confine the reading to this type any more than we would wish to confine the writing to reporting. Accordingly, a course in biography and a course in scientific literature are offered at the Group II and Group III levels. In fact, a student could concentrate in the non-imaginative literature by electing these two courses following his English 11 and 12.

His richest choice, of course, lies in imaginative literature. He can elect in Group II the short story, modern drama, modern novel, modern poetry, or a combination of some or all of these in a single course. In all these courses the emphasis rests upon introducing the student to the nature and significance of imaginative literature, and acquainting him with its peculiar values. Group III offers more advanced reading requiring greater maturity from the student. The courses cover the older drama, Shakespeare, the older novel, American Literature, and literary masterpieces.

The Department conceives of reading, then, in its richest sense. It means far more than comprehension of words and sentences, important as that is. It means sensitive perception and penetrating insight. It means understanding and being conditioned by emotional as well as intellectual communication.

The third part of the English program is speech. This work requires neither explanation nor justification. What has been said of composition is also pertinent to oral work. Just as composition is more than correctness, just as reading is more than literal understanding, so speech is more than platform poise, clear enunciation, and the avoidance of unpleasant and distracting mannerisms. All the elements of structure, logic, coherence, and focus that apply to writing apply equally to speaking. But speech demands even more than writing because the speaker is in direct contact with his audience, and must be sensitive and alert to all the psychological and social forces that will retard or promote his communication. The student can concentrate in speech by following his English 21 with English 41, a course in persuasive speaking, and English 141, devoted to argumentation and debate.

What I have been describing is the general, overall views of the English department. Much has been omitted, necessarily, especially such vital elements as the unique contributions of individual teachers. The aims of the Department are fairly well fixed. The methods will vary from time to time and from course to course because of individual teachers and the continuing search for means of improving the effectiveness of our work. For the past two years a curriculum committee has been examining and assessing our whole set of courses, our aims, and our methods, and will continue this study during the current year. Some changes already have been instituted as a result of this study. more will come; what is not likely to change is our conception of the primary contribution that English can make to the personal and professional life of the individual, a contribution neatly described as follows in *General Electric's Answer to Why Study English?* "Without a reasonably good command of English—as a means of communication—and without knowledge of what the best minds of all time have put into print, we are not educated for happiness, apart from the job, or for personal success in the exciting business of making a living."