

representation of the free energy change of formation per unit volume, is poorly drawn and only adds confusion to the textual description. The book is relatively error free and can certainly be recommended for the non-specialist and for the researcher who may be unaware of the breadth of applications.

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Effective Writing for Engineers, Managers, Scientists, H. J. Tichy, John Wiley and Sons, New York (1966). 337 pages, \$5.95.

Effective communication is a modern necessity and nowhere is it more essential than in organizations with large technical responsibilities. Scientists and engineers spend much of their time writing letters and reports, and the extent of their professional success is often closely related to their ability to write clearly and concisely. This book will be welcomed by many chemical engineers who seek practical advice toward improving their writing skills.

Dr. Tichy is a professor of English at Hunter College. She has extensive experience in teaching technical writing, having given short courses in a variety of industrial firms, including several chemical companies. Chemical engineers may recall her excellent articles on technical writing published in *Chemical Engineering Progress* in 1954. The theme of her entire book is simply this: Good writing follows from courtesy, from being considerate of the reader who wants to be told clearly, quickly, and efficiently what the writer has to say. Many illustrations are given to show how this may be done.

An entire chapter is devoted to the difficult subject "How to Begin" wherein Dr. Tichy quotes and critically discusses opening paragraphs from the technical literature, including several from the *A.I.Ch.E. Journal*. In other chapters, the author shows that she is well aware of the variety of writing which is required of engineers in business, government, academia, or elsewhere; she discusses how to write reports, memoranda, invitations, apologies, contracts, operating instructions, and all sorts of letters, including even letters of condolence. In all these discussions the common thread is consideration for the reader, clarity of expression, and most of all, economy of words. In what is perhaps the best

chapter, "Brevity—the Soul of It," Dr. Tichy effectively illustrates our deplorable urge to use ten words for something that may be said more clearly with five. How often have we seen such completely unnecessary phrases "At this point, it may be mentioned that . . ." or "For your information, I am herewith enclosing . . ." We are intoxicated with our own words. When Goethe's Mephistopheles talks about scholars, he aptly says, "Where concepts are lacking, a few appropriate words will soon present themselves." Dr. Tichy gives a long list of unnecessary words and phrases and with many examples illustrates how to reduce inflated sentences and paragraphs to their essentials. Anyone looking at this long list is likely to recognize excerpts from his own compositions.

The need for better writing has been stressed for many years by all who write but even more by those who read. Business executives reading technical reports, professors reading doctoral dissertations, and citizens reading directions for filling out income tax forms, share both confusion and pain while trying to understand. Countless editorials lament that all too few writers extend the necessary care and consideration for their readers which is required for true communication. The basic trouble seems to be that when we write, we tend to write for our own eyes, not for others. It is perhaps a small consolation that this problem is not new; about two hundred years ago Boswell's Dr. Johnson counseled an aspiring writer: "Read over your composition, and whenever you meet with a passage which you think is particularly fine, strike it out."

Dr. Tichy offers no panacea but a guide. Learning how to write is similar to learning how to dance or to play tennis; only a little talent is required but genuine interest and lots of practice are essential. Competent advice from an experienced professional is not only helpful but necessary; Dr. Tichy's book supplies this advice in a fresh and easily digested manner. It is a splendid book for any chemical engineer, regardless of age or position. It is not to be read like a text nor is it a reference book such as Perry's. Rather it is to be dipped into periodically, ten or fifteen minutes at a time, perhaps during the lunch hour or better still, just before writing that next major report. *Effective Writing* contains a wealth of useful suggestions and to the writer who is seriously willing to expend time and effort toward improving his prose, it provides both direction and encouragement.

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