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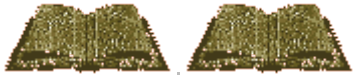
Book Reviews: Technical Books Section

 (N.B. Please increase your screen resolution to 1600 x 1200 dpi or more, for best viewing)

OTHER REVIEWS IN THIS ISSUE
[Technical Books Section] Pages: |1| 2| 3| 4| 5| 6| 7| 8| 9| 10| 11| 12| 13| 14| 15| 16| 17| 18| 19| 20|
[Popular Books Section] Pages: |1| 2| 3| 4| 5| 6|
[Books on CD/Audio Tapes] Pages: |1|
[Software/Multimedia] Pages: |1|
[Online Courses] Pages: |1|
REVIEWS IN THE PREVIOUS ISSUE | NEXT ISSUE

HONING COMMUNICATION SKILLS

The MIT guide to Science and Engineering Communication, 2nd Edition, *by* James G. Paradis and Muriel L. Zimmerman. paperback, spiral ring bound. 6" x 9".
The MIT Press, Massachusetts Institute of Technology, Cambridge, Massachusetts 02142: x + 324 Pages: Publication Date: 2002: ISBN 0-262-66127-6: Price $29.95

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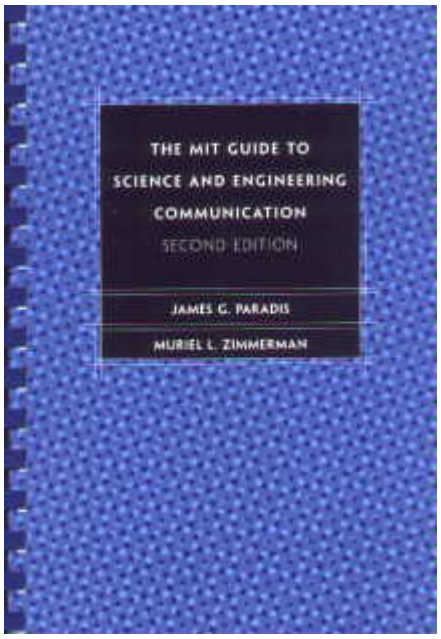


One of the most important things to know in today's information savvy world is communication skills. If you know how to communicate your ideas effectively to your targeted audience, you can go far in life. This is especially true for scientists and engineers. Imagine a scientist applying for a research grant to his University. He has come up with a good idea for research, and can perhaps easily get an opulent grant if he could effectively convince his superiors about his idea. On the contrary, if he fails to convince them, he may not get anything at all. His idea is good, but how does he convince them?

View this book on Amazon

It is exactly at this point that the book under review may prove useful. It is all about good and effective communication. Mainly aimed at scientists, doctors and engineers, it explains methods of effective communication in a number of different situations.

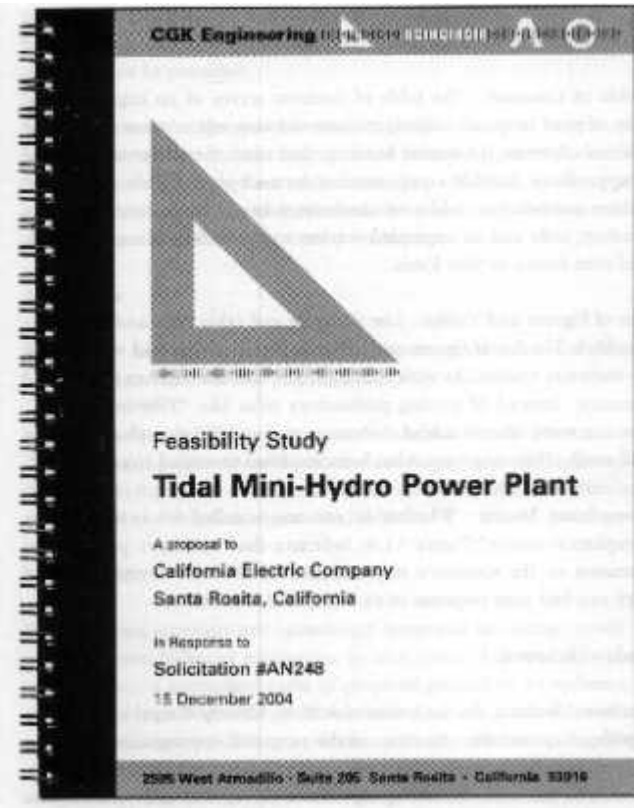
Whether you are trying to obtain grant from his University (as explained above), or writing a paper for publication in a peer reviewed journal, or trying to convince your potential customer of the superiority of your product over that of others, this book is for you.

The book is divided into two parts - nine chapters comprising each part. It also gives a very useful appendix called "A Brief Handbook of Style and Usage". It is a 28 page section and forms a very useful booklet on its own. I found it so useful that I would be tempted to buy this book, just for this section. It gives 27 effective tips to writers - each illustrated with a good and useful example. Here are some of the tips this section gives:

& Break long sentences into manageable units
& Emphasize the active voice
& Write with economy
& Avoid the abstract prose caused by excessive nominalizing
& Put parallel objects, actions, and thoughts into parallel sentence elements
& Don't line up long strings of modifiers in front of nouns
& Place modifiers close to the words they modify

And so on

The book is full of illustrative diagrams such as this. This one appearing on page 173 illustrates the importance of the cover page in a proposal document. An informative title and attractive design can help to persuade reviewers of the value of one's idea.



Each tip is illustrated with the help of several examples. Take for example the tip "Avoid the abstract prose caused by excessive nominalizing". The authors go on to explain this in some detail. Nominalizing refers to the formation of nouns from verbs. You take a verb like *detect*, change it to an abstract noun like *detection*, and add a passive general purpose verb like *has been achieved*. From these changes we can get a sentence like the following:

Wordy nominalization

The detection [Abstract noun made from the verb *detect*] of intracellular products of polymerase chain reaction has been achieved [Passive general-purpose verb] by two very different methods.

The authors show us, how this sentence can be improved by removing the nominalization. This is how the improved sentence looks:

Improved

Intracellular products of polymerase chain reaction have been detected by two very different methods. [The main action has been restored to the verb]

Then there are further examples with alternate improvements and so on and so forth. On the whole this section appeared very useful to this reviewer.

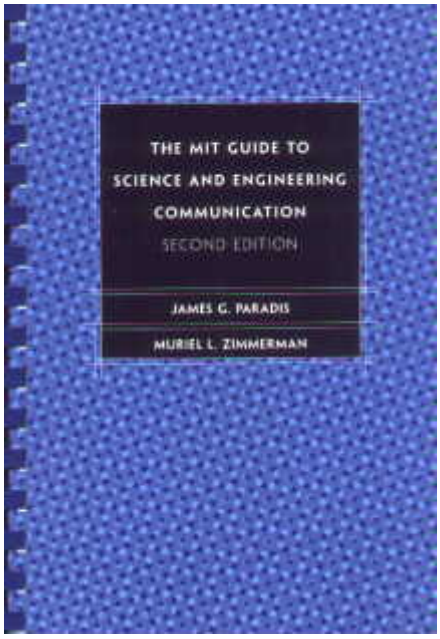
I would imagine that most of it (the tips given in this section) would come very "naturally" to a born writer, but those of us who are not born with this natural ability can certainly derive benefit from this section.

The main part of the book is devoted mainly to writing all kinds of documents - research papers, progress reports, CVs résumés and job correspondences, oral presentations, Journal articles,

proposals, memos and letters and so on. How can you convince your University authorities that the project you are about to undertake is full of promise? How can you convince them to cough up money as grants for your projects? How can you make your research into a paper acceptable by the editor of an International Peer-reviewed journal? How can you convince your potential customers that your product is better than that produced by your rival company? Things like these are discussed at length in this book.

Besides these points, a number of other important accessory information appears in the book too. How do you design your pages so that the report appears more appealing to the potential audience? Which fonts do you chose? Whether you justify your paragraphs or not? How do you bind your report? And a host of other similar things. And most of the advice given is backed up by research.

You might imagine that these things are very insignificant. But sample this information: research shows that ragged right margins are more readable than justified margins (page 91), a serif font (fonts in which small lines extend from the tops and bottoms of letters) is much better than a sans serif font (that which does not have these lines), as the former increases readability (page 94), extended text IN UPPERCASE LETTERS IS HARD TO READ AND BEST USED FOR BRIEF ELEMENTS LIKE HEADINGS (PAGE 94). It is much better to use lowercase letters for extended text.



" ... This book should be useful to all scientists and engineers, whether they are working in theoretical or applied sciences. This reviewer would highly recommend this book to all science, medicine and engineering students too, for it is at this stage that the foundations of an effective communicator are laid down. ... "

A number of technical points (related to writing) are explained. As a writer, I have heard the term *Gunning Fog Index* very often, and its importance as an important measure of the readability of a document, but I must confess, I did not know how it is calculated. While thumbing through the book, I discovered that this was explained on page 262. The *Fog Index* uses two factors in measuring readability - the average number of words in a sentence (AWS) and the percentage of words three syllables or longer (%DW). Now *Gunning Fog Index* can be calculated in this way:

0.4 x (AWS + % DW) = Grade level at which text can be read

Information of this type (which is not easily available elsewhere) increases the value of this book very much.

The authors begin each chapter by setting up a problem. You have to solve it. Then they go on to say how you can solve that problem effectively. Each of the 18 chapters is designed in this way. Sample this example from chapter 12 entitled "Progress Reports". Your problem is that your third progress report is due the next day. The news is bad. Less than halfway into a 12-month project, you've fallen behind schedule and used close to half your budget. You still hope to compensate for lost time and extra expenses, but now you must tell your manager about these difficulties. Unfortunately, you've already compounded your problem. Last month, you avoided reporting the project's deficiencies, hoping that you could solve the problems quickly. Your manager will be unpleasantly surprised that your last report was overly optimistic. What do you do now?

What do you do? How should you have made your progress report from the beginning? And now when you have messed things up, how do you get out of it? Interested readers may want to find out by reading the book.

The book is very well illustrated with diagrams to emphasize points authors wish to make. This reviewer discovered that on a number of occasions, the idea becomes clear just by looking at the diagram, without having to read the accompanying text.

The book comes in a spiral ring binding, which gives it an appearance of a practical manual (which indeed it is) rather than that of a usual book. It should be useful to all scientists and engineers, whether they are working in theoretical or applied sciences. I would highly recommend this book to all science, medicine and engineering students too, for it is at this stage that the foundations of an effective communicator are laid down.

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