



A most important engineering skill: **Learn to write!**

For an engineer, clear written communication is even more important than design innovation. This seems like heresy — but think about it: A wonderful designer who cannot communicate clearly and precisely in writing cannot possibly compete in the job market with a mediocre designer who can.

I have always loved words. But writing seemed a slow and painful process, so I avoided it whenever possible. In 1977, *Mini-Micro Systems* magazine asked me to write a survey of computer graphics. I pulled a lot of stuff together — no mean task, pre-Internet — and cobbled together an article with some labored prose. I sent it to my editor, Stan Klein. I was done, I thought, and relieved. I was wrong.

Stan wrote back that he loved the article. He appreciated all the work I'd put into it. He wondered, would I mind making a few small changes? My limited self-esteem responded enthusiastically to his praise and gentleness. Of course I wouldn't mind.

Thus began a process of weeks in which I rewrote, re-rewrote, restructured, and transformed the survey into a decent technical magazine piece. I lost count of the number of times the article went back and forth. And I never ceased to marvel at Stan's editing skills — in both English, and managing my tender feelings. It taught me to embrace editorial criticism and not take it personally.

You are an engineering professional. Like a journalist, you need to communicate clearly. But for you, the stakes are much higher. When my article is unclear, my readers may be disappointed or annoyed. But if you miscommunicate, the consequences might be much more severe. You could waste money, time, lose your job, or, worse yet, endanger lives. So I urge you to adopt a policy of continuous improvement toward writing. Here are some things to try.

- Make it a habit to evaluate what you read: What did or didn't you like about that e-mail or spec? How could you have improved it? Create a checklist of things that are important. Review it and modify it regularly. Post it where you can see it as you write.
- Find a partner to work with and to read each other's stuff and comment on it. (This is an old best-practice in programming.)
- Read about good writing. Some of my favorites: "Writing with Power," by Peter Elbow, "Writing the Natural Way," by Gabrielle Rico, and "Made to Stick," by Chip and Dan Heath.
- Keep a diary or a journal. Don't just write it, go back and read it regularly. My friend Larry Gress told me, "Plan to write poorly and edit well." That has been a helpful guide for me in my writing career.
- Consider your audience carefully. Write to them.
- Use short paragraphs. Double-space between paragraphs.
- Prefer short words and sentences.
- Embrace criticism, even — especially — if it makes you feel bad.
- Think about structure. What goes first? What's next?
- Don't address emotional issues in writing, use the phone or meet in person.

Check out my new book-writing blog: joeltrainsauthors.com.

— Joel Orr

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FIRST TIME...
EVERY TIME!**

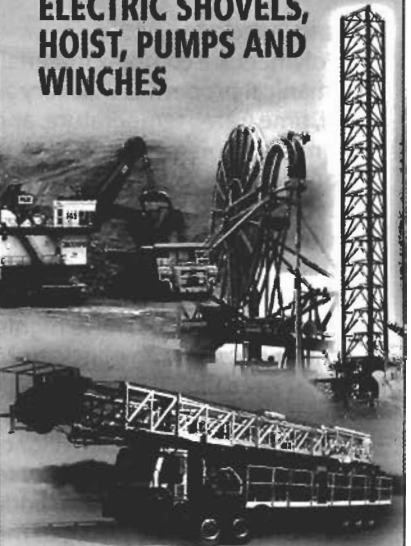
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