Tips Help Engineers Write Well -- Part 2

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In part 1 of this series on better writing for engineers I noted a tip in this installment might take ideas about writing and turn them "upside down." When you read a mystery or adventure story, the authors build events to a big finale. Newspaper writers followed much the same approach prior to the US Civil War. Articles ended with a big conclusion. Use of the telegraph for front-line communications with newspaper offices forced writers to place the most important information ahead of everything else because telegraph wires could get cut at almost any time. Better to get the main part of a story through right at the start of a transmission and send background information later.

Writers call this the "upside down pyramid" approach to writing because it makes us place conclusions at the start of an article. At first that sounds odd, but in a lab report, for example, you want your boss or colleagues to get the important information right away. Then you provide the details. So even when someone reads only, say, the first half of a report or application note, they get the main points. A brief conclusion can serve as a wrap up.

The upside-down pyramid has another advantage: when editors must cut lines and paragraphs from an article, they start to cut from the end. By having the important information at an article's start, you make it easy to cut material should the need arise.

In a column or article I like to include a reference or two because readers often ask themselves, "What comes next?" or "Where do I get more information?" This type of information might not help in a status report on your group's activities, but when you create a how-to guide, instruction sheet, or application note, links to more information help readers.

When engineers write they often use the passive voice. That means readers do not know who or what took action. This example illustrates the problem:

A boss calls in his head engineer and asks her to troubleshoot a power supply for an important customer. The engineer explains she will go on vacation for a week but will look at the power supply before she leaves. So the engineer goes into the lab, finds the problem, and leaves a note for her boss that says "Discovered the problem and returned supply to customer. A 120-Ohm resistor was placed between TP-12

and the V+ output."

The boss now wonders, did the engineer find a 120-Ohm resistor placed in the power supply by the customer, or did she place the resistor in the power supply to solve the problem? The power supply has gone back to the customer, so the boss doesn't know and must wait a week to find out. The note - -written in the passive voice - -didn't explain who did what. If only the note had said, "I put a 120-Ohm resistor in..." or "I found a 120-Ohm resistor and removed it..."

Internal reports and memos often include passive sentences such as, "The voltage was measured..," "the solution was stirred..," and "A conclusion was reached..." Unfortunately, academic people and professional journals have encouraged this type of impersonal writing. Avoid it when you can. People pay attention when you say, "We measured the voltage..," and "A Teflon-coated magnet stirred the solution..." You can find many useful pages on the Internet that provide more details about how to avoid the passive voice.

I dislike the verb "to be" (is, are, am, was, were, and so on) and try to avoid it. These verb forms often precede a gerund; a verb that ends with "ing," such as running or connecting. So I don't like gerunds, either. Look at this sentence, "For now the XYZ payments are going into a savings account." Why not say, "For now the XYZ payments go into a savings account."

And how about, "...those improvements add value to local businesses, so they are boosting assessed values." How about, "...those improvements add value to local businesses, so they boost assessed values." You can write without the verb "to be," but it takes practice.

To improve writing, read it aloud. My iMac has a speech setting that lets me listen to the computer "speak" what I wrote. Listening helps me discover rough spots and reword sentences. If it doesn't make sense to me, it won't make sense to others.

In the next installment I'll discuss how to create good charts and diagrams that accompany written information.

Reference

Zinsser, William, "On Writing Well," Harper Perennial, 2006. ISBN: 978-0060891541.

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