

PROPERTIES OF TECHNICAL WRITING

Reading a piece of technical writing leads one to discover its distinctive characteristics which differentiate it from other types of writing. One distinguishing mark of technical writing is aptly stated by Rufus Turner: "Truth is the soul of science. Good technical writing never misleads or misrepresents." Following is a list of the properties of technical writing which Zall refers to as the ABC's of report writing.

Accuracy

A misplaced decimal point or misstated fact could make months, even years of labor worthless. One error in calculation, one illogical statement can make the whole report doubtful. Every statement must be checked in its final form; care must be taken in changing words in the text, for one small change can change the meaning of an entire sentence, a whole paragraph -- even a whole report. Accuracy of statement depends not only on individual words but on the way sentences are put together, the way paragraphs are developed, and the way the report as a whole is balanced. As a whole, then, do not be content with being understood, but always guard against being misunderstood.

Brevity

The report reader is usually a busy man. Being brief therefore is a courtesy to him for he can get the essence of your thinking in compressed form. He reads your report because 1) he has to, as part of his job, or 2) he is looking for some vital information. Thus, he would prefer to have your message handed to him in a well-wrapped, easy to handle package made as small as possible. So you begin with your main point and then show why it is sound. Emphasize the highlights of your work, cut out irrelevant comments, immaterial excursions and meaningless statements. What you have left is the sum total of your information, which enables you -- as well as your reader -- to see what it all adds up to.

Coherence

Coherence is the logical togetherness of the material. Sentences, paragraphs and groups of paragraphs hold together by means of appropriate transitional devices which you, the writer, use in the composition. In this way the reader is able to see the clear

passage of thought from one point to another, a situation which leads to the reader's better understanding of the report.

Confidence

Confidence is the modest sureness on your part as the report writer. When you finish the last page of your report, you are an authority, knowing more about your subject than anyone else at that time. You have spent months compiling information, thinking about it, testing it, and constructing it into an orderly, connected body of thought. Therefore, there is no reason for you to use a mass of "perhaps" and "maybe's" and other forms of needless hedging and qualifying. If you are convinced that what you are saying is right, say it. If you are not convinced, then go back to see where the problem lies and how you can correct it.

Dignity

With confidence comes authority. There is dignity in the technical profession; thus the advice to write the way you speak does not apply here. In report writing you need formality with respect to words and the way words are used. Grammatical constructions should be complete; pronouns like "which" and "that" should be used. For example say: *Miss Rey informs us that a comet will appear on April 7.*, and not *Miss Rey informs us a comet will appear on April 7.* Contractions like "don't", "can't", "want" and others should be avoided. You will achieve simple dignity with straightforward expression, with summarized, simplified and well-organized information.

Emphasis

A report that shows emphasis discriminates between the main points and subordinate points, between main topics and illustrations or examples. A report that lacks properly placed emphasis makes everything seem as important as everything else.

You, the report writer, should tell the reader what is important and lead him from point to point by using a straightforward style, plenty of guideposts and transitional aids.

Facility

Facility is making the report easy to read. Short familiar words and sentences are helpful, but this kind of writing appears childish and unprofessional. Besides, simple sentences cannot convey the logical forms of complex thinking often required in a report. For facility, report writing should observe pacing, sequence, arrangement, and continuity. 1) Pacing is presenting technical and unfamiliar information in small segments, explained, defined or illustrated before more of such information is presented. 2) Sequence is leading the reader from the familiar to the unfamiliar, from the simple to the complex, from the whole to the parts. 3) Arrangement is emphasizing and balancing important parts to show their proper relationship and importance. 4) Continuity is showing the relation of one part to another, clearly stated, illustrated and emphasized.

Grammatical Correctness

Technical writing, like any other form of writing, requires grammatical correctness. Most readers have learned grammatical rules and expect others to use them too. If you upset their expectations, they will feel uncomfortable and probably confused. Make your writing straightforward, logical and clear and check your statement for sound as well as sense. Following the basic rules of grammar is equally important.

Honesty

Honesty in writing is chiefly acknowledging the use of other people's information or work either in footnotes or in text. It also

involves reporting your own failures and mistakes as well as successes in the hope that it will provide a clue for some researcher working on a similar subject from a different angle.

Illustration

Illustration material (referred to as graphics or visuals in other books), such as charts, graphs, diagrams, and photos is very helpful in technical writing. Graphic aids are used to clarify or support the text, to summarize detailed and complex data or to simplify a complicated concept. They can be used also to show a situation, a trend or a movement. Illustrative aids should be referred somewhere in the text and should bear a caption referring directly to the discussion they are supporting. They should be clearly labeled so that they could be understood at a glance.

Judgment

Judicious weighing of evidence is as important in a report as in a law court, and the principles are the same for both. (Evidence in report writing is the body of facts or data gathered and used by the writer to develop the report.) The best evidence is that which is 1) most ample; 2) most pertinent; 3) most simple in explaining the facts with least additional evidence; 4) most in harmony with the rest of the available evidence. The evidence used as a basis for judgment (as in conclusions or recommendations) should be included in the report.

Knowledge

The communication of knowledge is one of the chief functions of report writing -- knowledge which is more than a collection of data for it involves interpretation and the formulation of conclusions. Without interpretation, data could remain useless. The man in the best position to do the interpreting is the man who

has done the working and thinking which is based on certain assumptions which have guided his work. Another writer may apply different assumptions and reach different conclusions. It is therefore necessary to explain the basis of your work and put it into proper perspective. This may give the reader a chance to see old things in a new way or new things in a clear way. Either way, he will have gained knowledge which only you can give.

Logic

Logic is thinking straight. It is chiefly a process of classification, putting things in their proper places. Thus, there are certain trouble spots to avoid: 1) statements must not contradict each other; 2) words must be used in a consistent sense; 3) statements must move in one direction, whether space, time or relation; 4) statements must make sense; 5) judgments must not be based on too few data; 6) cause and effect should be clearly distinguished from simple sequence; 7) conclusions should not be inferred if they have no connection with the data; 8) an authority should not be accepted if he is biased and not an expert in the particular field.

Mechanical Neatness

Mechanical neatness involves putting the report in perfect shape -- neatly typed and well margined. Also, the use of frequent headings, subheadings and indentations helps to make the organization of the content clear. Your report should also be free from typographical errors, crossings-out, smudges and the like. A clean report shows that you care enough to send the best.

Normal Procedure

Normal procedure is conformity to standard practices, making the report easier to understand. Report readers are used to

finding information presented in standard fashion. If you depart from standard procedure, the reader may find the report confusing and unnerving and may be unsympathetic no matter how good the material is. If you want to deviate from the standard way, you must re-educate the reader and explain the change in the introduction, giving sound reasons for doing so.

Objectivity

Objectivity is the writer's assuming a detached, impartial point of view. It involves writing in the manner of a disinterested (not uninterested) second party. You, the writer, imagine yourself as another person or an innocent bystander, pretending to be someone else and trying to get yourself out of the picture. Commonly, reports avoid the use of the first person (I, me, my) except in short informal reports, in order to give the impression that the work is a team or company effort rather than an individual activity. Avoiding the first person also gives the reader the impression that there is no one standing between him and the work being reported. However, some editors of style manuals today aver that the use of the third person -- "This investigator discovered" -- rather than first person -- "I discovered" -- is wordy and confusing. To them, the judicious use of I or we in a technical report is appropriate. Such usage, they believe, will seldom lead to a report full of I's and we's for, after all, there are many agents in a report other than the writer.

Qualification

Qualification is explaining the circumstances surrounding your work because they might have affected the results you are reporting. Modern scientific thinking is based on the concept of change -- what is true at a given time may no longer be true when that time has passed. As you report your results, you are saying: "This is true under the given condition." The scientific reader wants

to know what these conditions were because he would like to decide for himself whether your work is valid or not. You should also describe what factors were constant and what factors were variable as you worked.

Straight Sentences

Sentences carry the full weight of meaning in a report. Each paragraph begins with a statement of its subject (topic sentence). The succeeding sentences have direct bearing on the first one. All sentences proceed straight ahead, the subject coming first followed by the verb. It is a good idea to limit a sentence to one idea or two closely related ideas. The reader can thus grasp your meaning more easily than if you pile up idea upon idea. Transitional aids from sentence to sentence will enable the reader to follow your thought and also provide straightforward movement leading him where you want him to go. The chief thing to strive for is movement so that the sentences move straight ahead.

Thoroughness

Thoroughness is treating your subject fully for your report to have lasting value. It extends throughout the report writing project from initial thinking to final submittal. You can achieve thoroughness by 1) preparing a checklist of requirements in the planning stage, 2) marking off each requirement as it is fulfilled, and 3) using the checklist again in the revision stage for a final recheck.

Unity

Unity implies that all the details and facts in the report are clearly relevant to the main point under discussion. One way to check unity is to read critically as you go along, asking "What has this to do with the subject?" Another more mechanical check is to draw a line from the subject of a paragraph to the subject of the

next and succeeding paragraphs. If the subject can be tied together, the report is probably unified. A third check is to prepare headings for each paragraph and then list them in outline form. If they all bear directly on the title, chances are the report is unified. A unified report satisfies the reader.

Veracity

Veracity means truthfulness. Truth is the soul of science. Thus, good technical writing never misleads or misrepresents. It sticks to facts. It does not indulge in evasion, equivocation or shifting the issue. It is chiefly concerned with reporting the facts, no more, no less.

Viewpoint

A report is written from a certain viewpoint -- that of a reporter, teacher, researcher, or the like. The viewpoint is established with the first sentence and should be maintained throughout the report. Thus, if you begin talking like a professor, stick with that voice to the end.

Word Choice

You are the report writer, an expert or specialist. But your reader is not always a specialist like you; he may be a nonspecialist or a layman. It is safe to assume, however, that he is a semispecialist who has sense to grasp the meaning of specialized words from the context or he will look them up in a technical dictionary. Technical words therefore may be used in a technical report. But you must avoid pompous, ornate words, and especially vague words. Be as precise as you can; if you mean 24 samples say "24 samples" and not "a couple of dozen." If you mean the part could not be used because it rusted, say "The part was rusted beyond use," rather than "The part was not used due to rust."

You-Point

Technical writing is writing exclusively for an intended reader. You should have an accurate knowledge of the reader's comprehension level, experience, needs and training and think of pacing and timing. Present your information in segments appropriate to the reader's knowledge and needs. Get into the habit of going from the simple to the complex, from the known to the unknown, the familiar to the unfamiliar, the nontechnical to the technical. Do not smother the reader with details, but show him the main ideas occasionally. Above all, avoid overwriting.

Zest

Report writing involves thinking and working, which may not be easy to do but have to be done. The activity need not be painful if you write as though you were performing a service that only you can perform and feel that you are writing something worth saying and that you enjoy doing it. The report writing activity indeed should be characterized by zest or hearty enjoyment. If you get tired or bored, take a break, go for a walk, read a book, or get some sleep. Then, resume working with a fresh mind that could help bring out the best result.