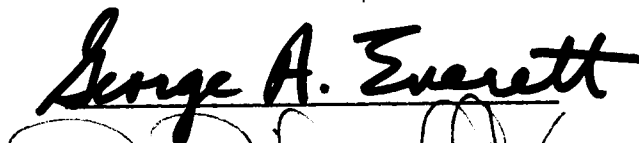
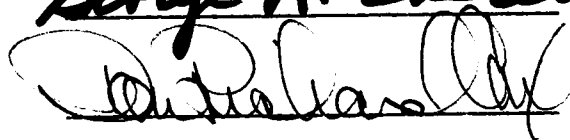


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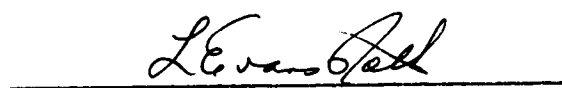
I am submitting herewith a thesis written by Regina Vincent Clark entitled "Oak Ridge National Laboratory Scientists' and Engineers' Perceptions of Technical Editors." I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Communications.


Paul G. Ashdown, Major Professor

We have read this thesis and
recommend its acceptance:



Frederick M. O'Hara, Jr.

Accepted for the Council:


Vice Chancellor
Graduate Studies and Research

OAK RIDGE NATIONAL LABORATORY SCIENTISTS' AND ENGINEERS'
PERCEPTIONS OF TECHNICAL EDITORS

A Thesis
Presented for the
Master of Science
Degree
The University of Tennessee, Knoxville

Regina Vincent Clark

August 1982

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To Charles, Nicky, Charlette,

Djenara, and Jabari.

Without your patience, I

could not have made it.

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ABSTRACT

This research was an examination of the attitudes and perceptions that scientists and engineers at Oak Ridge National Laboratory (ORNL) have toward technical editors. The current literature indicated that most engineers and scientists resent having anyone change their work. The purpose of the study was to determine, at least from the perspective of the ORNL scientist and engineer, the depth and/or source of this resentment. Because ORNL is such a large national laboratory and because of the diverse population employed there, it is believed that the findings of the study can be applied nationwide as typical of the attitudes of scientists and engineers toward technical editors.

Information was gained through a mail survey in the fall of 1981. The questionnaire was mailed to 230 members of the technical staff in six research divisions at ORNL, and a 70% response rate was achieved by the end of the two-week closing date.

Most of the scientists and engineers responding indicated that their attitudes toward technical editors were either favorable or highly favorable. However, when asked whether they would allow in-depth or extensive editing and rewriting, only a total of 13% either mildly or strongly favored such detailed editing.

Other findings were as follows:

- (1) Overall, scientists and engineers are beginning to see technical editors as professionals.

- (2) The services of the technical editor are important to the work of scientists and engineers at ORNL, and

(3) Most scientists and engineers reported that their own writing could be improved if they had more writing courses.

In addition to the scientists and engineers at ORNL, technical editors and division directors were also surveyed. The technical editors were, however, queried on how they felt they (the technical editors) were perceived by scientists and engineers. Comparisons of the technical editors' predictions with the actual responses of the scientists and engineers were reflective of a close working relationship--for the technical editors' responses corresponded closely to the responses of the scientists and engineers.

The division directors' survey, performed in nine research divisions, revealed the following findings:

(1) The technical editor is not only seen as a professional, but the services of the technical editor are important to the work of the division directors, who are frequent users of technical editing services at ORNL.

(2) In comparison with the engineers and scientists, the division directors are less opposed to in-depth editing. These division directors, however, would like to see more writing assistance programs made available to scientists and engineers.

TABLE OF CONTENTS

CHAPTER	PAGE
I. INTRODUCTION	1
Oak Ridge National Laboratory	4
II. LITERATURE REVIEW, PROBLEM, AND METHODOLOGY	9
Additional Literature	9
Problem	12
Methodology	13
III. FINDINGS OF THE STUDY	16
Attitudes Toward Technical Editors	19
Importance of the Services	22
Effect of Computerized Text Editing	27
In-Depth Editing	29
Ranking of Key Items of Interest	33
Ranking of Courses	33
Suggestions for Additional Services	36
Responses by Profession	37
Responses from Technical Editors	37
Responses from Division Directors	38
IV. CONCLUSIONS	40
Recommendations for Future Study	42
LIST OF REFERENCES	44
APPENDIX A: SCIENTISTS' AND ENGINEERS' QUESTIONNAIRE AND COVER LETTER	48
APPENDIX B: RESPONSES BY PROFESSION	53
APPENDIX C: TECHNICAL EDITORS' RESPONSES	61
APPENDIX D: DIVISION DIRECTORS' RESPONSES	65
APPENDIX E: VERBATIM COMMENTS FROM SCIENTISTS AND ENGINEERS	69
VITA	73

LIST OF TABLES

TABLE	PAGE
1. Years of professional experience of scientists and engineers at ORNL	17
2. Approximate number of reports published and edited during FY 1980	18
3. Percentage distribution of responses concerning usage of technical editing services and general perceptions of technical editors	20
4. Percentage distribution of responses to Question 6--"Of the following, which phrase best reflects your attitude toward technical editors?"	21
5. Percentage distribution of responses to Question 8--"How important are the services of a technical editor to your work?"	24
6. Percentage distribution of responses to Question 9--"Has the preparation of letters and internal memos (not usually edited) by your office benefited from the experience of working with a technical editor on formal documents?"	25
7. Percentage distribution of responses to Question 10--". . . which would you prefer to review following editing?"	28
8. Percentage distribution of responses to Question 11--". . . what is your reaction to 'in-depth' editing, that is, the rewriting and restructuring of perhaps large segments of your document?"	32
9. Overall ranking of items of interest	34
10. Ranking of key items of interest by division	35
11. Ranking of courses by division	36
B.1. Responses concerning usage of technical editing services and general perceptions of technical editors	55
B.2. Percentage distribution (by profession) of responses to Question 6--". . . which phrase best reflects your attitude toward technical editors?"	55
B.3. Percentage distribution (by profession) of responses to Question 8--"How important are the services of a technical editor to your work?"	56

TABLE

PAGE

B.4.	Percentage distribution (by profession) of responses to Question 9--"Has the preparation of letters and internal memos (not usually edited) by your office benefited from the experience of working with a technical editor on formal documents?"	57
B.5.	Percentage distribution (by profession) of responses to Question 10--". . . which would you prefer to review following editing?"	57
B.6.	Percentage distribution (by profession) of responses to Question 11--". . . what is your reaction to 'in-depth' editing, that is, the rewriting and restructuring of perhaps large segments of your documents?"	58
B.7.	Ranking of key items of interest by profession	59
B.8.	Ranking of courses by profession	60
E.1.	Verbatim responses to Question 12, ". . . under what circumstances, if any, would you permit a technical editor to perform 'in-depth' editing?"	70
E.2.	Verbatim responses to Question 15, "How can the technical editor better serve you?"	71

LIST OF FIGURES

FIGURE		PAGE
1.	Typical example of editing/production process	8
2.	Comparison between technical editors' predictions and actual scientists'/engineers' responses on Question 6-- ". . . which phrase best reflects your attitude toward technical editors?"	23
3.	Comparison between technical editors' predictions and actual scientists'/engineers' responses to Question 9--"Has the preparation of letters and internal memos (not normally edited) by your office benefited from the experience of working with a technical editor on formal documents?"	26
4.	Comparison between technical editors' predictions and actual scientists'/engineers' responses to Question 10-- ". . . which would you prefer to review following editing?" .	30
5.	Comparison between technical editors' predictions and actual scientists'/engineers' responses to Question 11-- "Based on your experience with ORNL technical editors, what is your reaction to in-depth editing, that is, the rewriting and restructuring of perhaps large segments of your document?"	31
B.1.	Distribution of respondents by profession	54

CHAPTER I

INTRODUCTION

Technical writing is "writing on a technical subject--generally one that falls within the general field of science and engineering" (Mills and Walter, 1978). The profession is an established and important pursuit (Weisman, 1962). Of the approximately 6000 members of the Society for Technical Communication (STC), a professional organization for technical communicators, most are technical editors and writers. Quoting Robert Rathbone, who has traced the development of technical writing and editing in this country, Frank Smith (1981) writes:

Although the art of technical writing is almost as old as science itself, the profession of technical writing has a recent beginning The real impetus came in World War II when a special task force was recruited to report on new scientific devices and weaponry.

The term technical writing is vague, covering a large communications territory. Originally, depending on the organization, persons in this field were known as technical writers, technical editors, publications engineers, or industrial engineers (Weisman, 1962). But, they all did essentially the same thing, which might have ranged from working on reports and manuals to writing articles for newspapers and magazines to explain certain scientific and technological advances within their respective organizations. Although some effort was made as early as the 1950's to distinguish between writing done by scientists and engineers for their colleagues and "writing done by technical writers who serve as middlemen, interpreters, or translators of scientific matters researched,

developed, created, or produced by another person" (Weisman, 1962), some overlapping of responsibilities and titles still exists today.

The technical writer today is more responsible for writing on a science or technology. Technical writers may "write specifications; prepare speeches and news releases; edit and write technical books; and handle technical documentation" ("Technical Writers," 1978-79). The technical editor, however, is primarily responsible for amending, revising, compiling material, and making it suitable for publication. The technical editor's main responsibility deals with the communications aspects of the document--what the words say and how well they are said--rather than the technical aspects (Boomhower, 1975).

The technical editor

puts himself in the reader's position and judges a manuscript on the basis of whether it tells him, in his reader's role, what the reader should know . . . and only what he needs to know completely, concisely, clearly, and accurately (Boomhower, 1975).

Gibson Cederborg (1975) adds:

A requisite of the editor is the ability to act as a pilot reader in place of the total reader audience. When the editor looks at the draft with an objective, critical eye, he sees what is actually written, not what should have been expressed or what the writer imagines is there.

The purpose of this paper is to determine the Oak Ridge National Laboratory (ORNL) scientist/engineer's perception of technical editors. A review of the literature indicates that some engineers see the technical editor as someone to correct grammar and spelling--but not to revise or make suggestions for revisions.

The common opinion seems to be that technical writers and editors just "push a few words around, polish the engineer's prose, and sprinkle

lightly with commas" (Thorne, 1980). However, the job of the technical writer and editor is more than "word engineering. By assuming responsibility for the production of a document, the technical editor frees others to do their own jobs more effectively" (Zussman, 1979). On the average, engineers and technologists spend approximately 20% to 25% of their time "writing up what they have been working on the other 75% of the time" (Mills and Walter, 1979; also Pauley, 1979; Davis, 1975).

Why is so much time spent in writing? "The technical author is the key figure in marketing his company's services and products" (Banks, 1966). Not only must the products be made available, writes Banks, but the products must be made known to potential users--thus, the importance of publications (Banks, 1966).

Weisman (1962) adds, "Research is not complete until it has been recorded, reported, and disseminated. The report is the chief end-product in much scientific activity."

The following excerpt is from a report of the President's Science Advisory Committee [Science, Government, and Information, The White House (January 10, 1963)], emphasizing the importance of the successful transfer of technical information:

Transfer of information is an inseparable part of research and development. All those concerned with research and development--individual scientists and engineers, industrial and academic research establishments, technical societies, and Government agencies--must accept responsibility for the transfer of information in the same degree and spirit that they accept responsibility for research and development.

Because effective technical editing is so important to the successful work of scientists and engineers, it is important to learn something about the relationship between these two kinds of professionals.

Oak Ridge National Laboratory

As one of the nation's most extensive and diverse multi-program scientific research facilities, ORNL is best described as a national energy laboratory. ORNL, which is operated by Union Carbide Corporation for the Department of Energy, is primarily concerned with the development of safe, economic, and environmentally acceptable technologies for efficient production and use of energy from various sources (Jared, 1982).

As part of the World War II Manhattan Project (circa 1943), ORNL had a somewhat limited role in the area of nuclear energy development (Postma, 1982). However, with the increasing nationwide emphasis on nonnuclear energy, ORNL's role in both nuclear and nonnuclear energy research has been expanded and now covers many fields of science and technology such as biomedical, environmental, and energy production and conservation and its associated health effects.

Of the more than 5000 staff members at ORNL, about 660 are engineers, (chemical, electrical, mechanical, and nuclear), 20 are mathematicians, and about 1000 are scientists of various kinds (Postma, 1982). In addition, about 500 guest scientists (from other United States industries or from foreign laboratories and research centers) are on temporary assignments for periods ranging from a few months to a year or more.

This research originated in 1978 as a means of examining how satisfied engineers and scientists were with the technical editing services provided in one of the ORNL research divisions. Such a study would identify weaknesses in the services presently available to the scientist/engineer, as well as what additional services could or should be offered.

Also, one could determine if, in the opinion of the scientist/engineer, more editors should be hired based on their scientific academic backgrounds or if emphasis should be placed on hiring editors from the liberal arts or communications backgrounds.

The research presented here is especially timely in light of the recent concern voiced by the STC regarding the professional status of technical communicators.

The STC's new interest in ethics, and in rhetorical and situational editing, and the gestating rebellion against reliance on Fundamental English, are suggestive of our professional unease and disquieting view of the whither to which we seem to drift (Osborne, 1981).

This research is also significant because only two previous studies (Barnett and Zultowski) have addressed the question of the values placed on technical editors from a research point of view. Barnett (1980) studied the establishment of technical writing and communications as a recognized profession. That study, however, was concerned primarily with how technical communicators (writers, editors, etc.) saw themselves. Some of the questions asked were:

What is technical writing? What skills should the technical writer have? What is the technical communicator? How does technical writing differ from technical communications? What academic disciplines should the technical writer study?

The conclusions drawn by Barnett imply that technical communicators have low self-esteem, which, if true, could be the basis for "nonprofessionalism," says Smith (1980). For, in order for a technical editor to be treated like a professional, he or she must behave like one.

Walter Zultowski and Robert L. Dipboye did a similar study in 1978 at the request of the ORNL Information Division. The objective was to

obtain an index of current customer satisfaction with each of the publication services available through the ORNL Library System, Publications and Visual Arts, and Information Dissemination and Control.

In addition, information relative to how existing services might be improved to better meet the needs of service users was also sought.

For the purposes of this research, the topic focuses on (1) the technical editor (as opposed to a technical writer) and (2) the attitudes and perceptions of users of technical editing services at ORNL.

At ORNL, the technical editor generally is responsible for correctness of grammar, punctuation, format, style, sentence and paragraph structure; proper usage of capitalization and abbreviations; consistency of format and style; spelling and proofreading; the overall appearance of the document (layout); and other details involving the mechanics of good writing and production. But, as is the case for most editors in general, the technical editor at ORNL is taking on the role of a writer-editor-coordinator. In this role, the editor becomes a functionary in getting a job out, with responsibility to coordinate, write, rewrite, edit, produce, expedite approval and reproduction, and ensure proper distribution (McCafferty, 1971).

Basically three levels of editing are offered at ORNL: copymark/coordinate (sometimes referred to as a light-edit), moderate edit, and in-depth editing, which is rewriting and restructuring the original text. The technical author decides how extensively he wants his document edited, and the editor edits accordingly.

The copymark/coordinate or light-edit involves numbering manuscript pages and styling publications according to page layout, headings, tables, figure captions, etc. A light-edit also requires corrections to grammar,

spelling, and punctuation, and consistency and clarity of unit measurements and mathematical and technical symbols. The moderate edit includes all of the responsibilities required in a light-edit as well as ensuring that sentences and paragraphs are well organized and presented in logical progression.

The third and probably most controversial level of edit is the substantive in-depth/rewrite/restructure. This level of edit involves (1) use of editorial judgment to determine clarity, and (2) reorganization and editing as necessary.

Generally, the author reviews the edited document before it is typed or typeset (Figure 1). The document review can take place either with or without the editor present. If the copy has been marked up extensively, it is better that the editor and author review the copy together. When the author is satisfied with the editorial changes, the editor then coordinates the document through its final publication stages (i.e., typing, proofreading, makeup, final review, and printing).

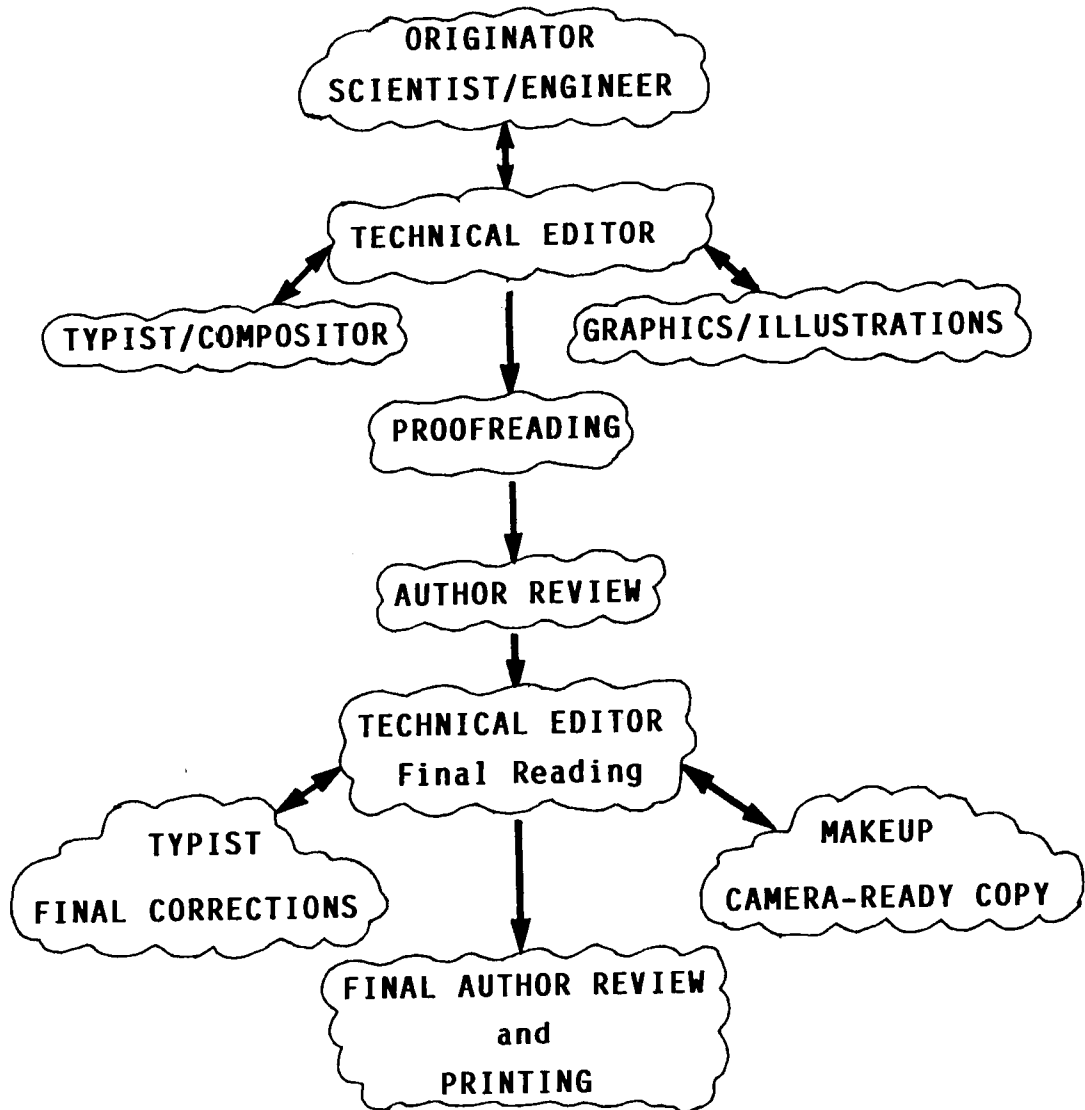


Figure 1. Typical example of editing/production process.

CHAPTER II

LITERATURE REVIEW, PROBLEM, AND METHODOLOGY

Additional Literature

An abundance of literature has been published on the general technical communication field. Although such literature was helpful in providing background material and information, only selected sources were examined and reported in this study. The literature review consisted mainly of articles published in Technical Communication, books on the subject of technical editing and technical communications, papers presented at professional meetings, and published proceedings of such meetings. Additional references studied included International Association of Business Communicators (IABC), public relations, engineering, and engineering education publications.

Key words used in this review were: technical editor, editor, technical writer, writer, communications, communicator, technical communicator, engineer, engineering, and writing. Very little has been published on the attitudes of engineers and scientists toward technical editors. However, a review of the literature revealed evidence that the technical editing field is gradually becoming a recognized profession. Frank Smith, editor of Technical Communication, has thus far shown the greatest interest in the problem. Smith (1979) writes,

The Society for Technical Communication conferences, journals, and independent publications are beginning to form a body of systematized knowledge which can eventually lead to the establishment of a recognized profession.

The increased emphasis on this topic and conversations with other technical editors suggest that technical editors are concerned that they are not looked upon as professionals. As was noted in a memo from C. C. Hopkins (1980), former Executive Director at ORNL, editors and publications officers are sometimes looked upon as "extensions to secretarial pools." Smith (1979) reiterates this in his editorial, "Twenty-Five Years Later,"

One consequence of the lack of appreciation on the part of management is that the technical writer (editor) is seen as no more than a moderately skilled clerk who is paid to do the drudgery that the engineer and scientist are too busy to do.

Michael T. O'Neill (1980), Director of Research and Development at Personelfinders, Arlington, Texas, says, "Writers in business--technical or otherwise--are second-class citizens."

Although the terms professional and professionalism are difficult to define, Smith (1980) makes the following conclusion in a more recent article:

We are moving slowly but steadily down that long road to professionalism. We have begun to set standards; we have helped establish programs; we have started to do research; we have formed a small but tangible body of literature; we have developed means to recognize excellence in our work; and we have created forums in which we can share knowledge with each other.

"Engineers have a reputation for being poor writers," says Robert Woelfe (1978), so no one questions the need for better report writing in business and industry (Pauley, 1979). The fact that technical writing courses are now mandatory in technical curricula is evidence of that need (Pauley, 1979). "Journals and employers in practically all technical fields," adds Pauley, "lament the failure of technicians and engineers to communicate effectively."

But what happens when the engineer cannot communicate effectively? What happens when the engineer's writing is plagued with what Paul Vehr (1978) terms "Infirmity Communicare--the inability to communicate"? Since many of the technical writing courses offered to engineers are taught by practicing engineers, Vehr and others question the effectiveness of such courses: "So many textbooks, written by professors who want to put their education on display, do not communicate. They are written in a style that imparts a minimum of information." After about four or five years of pedantic textbooks and professors, says Vehr, the average engineering student accepts this style of information as normal.

Don Bush (1977) of McDonnell Aircraft Company states further, "When the young engineer is taught to write, he is given a list of 'don'ts': don't say state of the art, don't say irregardless, etc." Because of the restrictions placed on his writing, says Bush, the engineer turns to the literature of the trade for guidance. "There he finds long sentences, a pedantic vocabulary, and an abstract, impersonal style. He finds dullness" (Bush, 1977).

Most college and in-house sponsored technical communications courses are structured to teach how to write, says Howard Reba (1978) of the United States Naval Ordnance Station. But few, if any, of these courses are designed to provide an understanding of style and format as well as the mechanics and production techniques needed to develop the well-rounded communicator.

"Many of the engineers who teach technical communications (whose work I have looked over) have been poor writers themselves," says one technical editor. "Many of them can't even spell the words in their own vocabulary" (Sadowski, 1979).

Efficient communication of scientific thought or technical information--whether conveyed by a technical writer, a scientist, or an engineer--does not just happen, writes Weisman (1962). "To communicate effectively, the language must be used with clarity, precision, and grace."

While there are no rigid requirements for entry into the technical communication profession, one very basic requirement is writing and language skill. And, although a college degree is not mandatory, it is helpful; and many employers insist on it ("Technical Writers," 1978-79). According to a survey performed by the IABC, one in three communicators majored in journalism ("It Pays," 1981). In addition, three-fourths of the firms employing technical writers prefer those with liberal arts or journalism majors, with secondary training in technical or scientific subjects ("Technical Writers," 1978-79).

Problem

The information gathered as a result of this survey should have long-term value because the field of technical editing is a fairly new one (Smith, 1979). The increased emphasis on this topic and conversations with other technical editors suggest that technical editors are concerned that they are not looked upon as professionals.

In carrying out this research, the following groups were surveyed: (1) scientists and engineers from six research and development divisions at ORNL, (2) ORNL division directors, and (3) the technical editors at ORNL. Questions asked of the divisions and division directors included: What is your attitude toward technical editors? Do you see the technical editor as a professional? What is your reaction to in-depth

editing (i.e., the rewriting or restructuring of sentences and paragraphs) as opposed to light-editing (correcting spelling, grammar, and making style consistent)? What kinds of courses do you recommend for the prospective technical editor? How can the technical editor better serve you? The full questionnaire is given in Appendix A.

The purpose of surveying those division directors with and without publications offices was twofold--to compare the attitudes of the division directors with those of the scientists and engineers and to gauge the attitudes of those divisions without the benefit of specific division publications offices in an effort to find out why some use the services whereas others do not.

The technical editors' survey was distributed during the week of November 18 (one week prior to mailing the scientists' and engineers' survey). Basically, the identical questionnaire used in the scientist/engineer survey was used with the technical editors. (Note: Questions 6 through 15 from the scientists' and engineers' survey were numbered 1 through 10 on the editors' survey.) The technical editors, however, were asked to place themselves in the engineer's role and answer the questionnaire based on how they (the editors) felt the scientists and engineers would respond.

Methodology

The research method used in gathering the necessary data was a mail survey. The sample included 230 randomly selected names from six ORNL divisions. The random numbers, systematically drawn from a listing of all exempt technical staff members from those divisions with publications offices, were computer-generated, using a Digital Equipment Corporation

computer and an IMSL (International Mathematical and Statistical Library) subroutine. Approximately 30% of the technical staff in each participating division was selected for the survey. The survey questionnaire and cover letter were mailed (see Appendix A) during the week of November 30, 1981. Respondents were asked to return the questionnaires by December 16, 1981.

Since scientists of various professions comprise each division, it was also important to determine the distribution of respondents by profession to see how various professional groups perceive technical editors. Although this research focuses primarily on scientists and engineers, a comparison can easily be made on an interdisciplinary basis. For example, do engineers write more? Do chemists and engineers share the same attitudes about technical editors?

Before the actual survey was distributed, a pretest was conducted among five members of the Fuel Recycle Division to determine the effectiveness of the questionnaire. Although the pretest nearly "always results in improvements in the questionnaire" (Cochran, 1977), participants in the pretest answered each question as expected; thus, major revisions to the questionnaire were not required.

The mail survey was chosen over telephone and personal interviews mainly for time considerations and economic reasons. Also, the mail survey reduces systematic intentional and unintentional bias (e.g., bias based on the sound of one's voice, female versus male voice, etc.). Although the response rate for telephone surveys is generally high (80% to 90%), the response rate for this particular mail survey was also expected to be fairly high (about 50% to 60%) because of the specialized

population selected (Dillman, 1978). In addition, the time required for telephone and personal interviews would have been excessive. By receiving the questionnaire in the mail, respondents were able to complete the two-page survey at their leisure.

Another disadvantage of the personal or telephone interview is that both require the interviewer's close attention as he or she listens to answers. And, if the survey is long, there is a tendency for the interviewee to become bored.

Unfortunately, the survey was distributed at a time when many of the employees were vacationing (post-Thanksgiving holidays, etc.). To improve the response rate, a reminder letter was mailed one week before the December 16 cut-off date (see Appendix A).

CHAPTER III

FINDINGS OF THE STUDY

Despite year-end vacations and holidays, at the close of the allotted response time (two weeks) 160 (70%) of the survey group (230) had returned their questionnaires. The six divisions selected were those using the editorial services of the Information Division's Technical Publications Department (TPD), in general, and specifically, divisions with Division Publications Offices (DPO's) primarily assigned to do that division's publications work.

To make a comparison of how the various groups responded (by profession), each participant was asked to classify himself (e.g., biologist, engineer, chemist, etc.), based on his education and experience. Fifty-four percent classified themselves as engineers. The remaining 46% was distributed as follows: 10% biologists, 10% chemists, 14% physicists, and 12% other (metallurgists, soil scientists, environmental scientists, ecologists, etc.).

The average number of years of professional experience (which included industrial, business, consulting, government, management, and teaching) was 19 for the overall survey. A breakdown by division is shown in Table 1.

The approximate number of reports published and edited during FY 1980 is shown in Table 2. Practically all of the formal reports and many of the open-literature contributions (that is, journal articles, speeches, and papers presented for public meetings) published were edited by a technical editor. However, only 13% of the internal/informal

Table 1. Years of professional experience of
scientists and engineers at ORNL

Division	Years of Professional Experience		
	Minimum	Maximum	Mean
Fuel Recycle	2	41	22
Metals and Ceramics	1	35	20
Fusion Energy	2	31	15
Engineering Technology	2	41	21
Chemical Technology	1	40	22
Environmental Sciences	2	29	12

Table 2. Approximate number of reports published and edited during FY 1980

Division	Published			Published--		Edited		Edited--	
	Topical Reports	Memorandums	Literature	Open Literature	Topical Reports	Memorandums	Open Literature	Topical Reports	Open Literature
Metals and Ceramics	27	89	81	24	28	20			
Fuel Recycle	9	175	14	9	0	7			
Engineering Technology	43	114	30	42	9	10			
Chemical Technology	52	153	52	52	30	10			
Environmental Sciences	29	50	116	21	8	91			
Fusion Energy	23	22	37	23	2	33			
Total	183	603	330	171	77	171			
Average	30.5	100.5	55	28.5	12.8	28.5			

memorandums were edited. This can probably be attributed to the vague definition of "internal/informal memorandums," which to the scientist or engineer could mean business correspondence on one hand, to informal monthly reports for higher management on the other.

Hereafter, the findings are presented following the same order used in the questionnaire (see Appendix A), for example, attitudes toward technical editors, importance of the services, confidence levels, ranking importance of key items of interest (to both engineers/scientists and editors), and ranking of suggested coursework for technical editors.

Attitudes Toward Technical Editors

It is interesting to note that when questioned on their usage of technical editing services and general perceptions of technical editors, 83% (133) of the respondents indicated that they had worked with technical editors, and 82% (131) viewed the technical editor as a professional (Table 3). Whereas it cannot be assumed that the same respondents made up these percentages, it is significant that there were as many respondents who said they felt technical editors were professionals as there were who had worked with technical editors.

When asked, "Of the following, which phrase best reflects your attitude toward technical editors?," 108 (68%) said their attitudes were either favorable (47%) or highly favorable (21%). Each of the six divisions surveyed had percentages above 50% in answering this question (Table 4). In the Metals and Ceramics Division (MCD), 53% had favorable or highly favorable attitudes, the Fuel Recycle Division (FRD) 75%, Engineering Technology Division (ETD) 67%, Chemical Technology Division

Table 3. Percentage distribution of responses concerning usage of technical editing services and general perceptions of technical editors

Division	Q.3. Percentage of Respondents Who Have Worked with Technical Editor	Q.7. Percentage of Respondents Who See Technical Editor as Professional
Overall (N = 160) ^a	83	82
MCD (N = 30)	80	77
FRD (N = 10)	90	90
ETD (N = 33)	79	85
CTD (N = 36)	72	97
ESD (N = 29)	97	62
FED (N = 22)	91	82

^aN = number of respondents.

Table 4. Percentage distribution of responses to Question 6--"Of the following, which phrase best reflects your attitude toward technical editors?"

Response	Overall Survey N = 160 (%)	MCD N = 30 (%)	FRD N = 10 (%)	ETD N = 33 (%)	CTD N = 36 (%)	ESD N = 29 (%)	FED N = 22 (%)
Highly unfavorable	6	0	10	3	8	14	0
Unfavorable	4	7	0	3	0	3	9
Neutral	21	37	0	12	11	21	23
Favorable	47	43	60	52	42	41	54
Highly favorable	21	10	30	15	14	17	14
No response	1	3	0	15	25	4	0
Total	100	100	100	100	100	100	100

(CTD) 81%, Environmental Sciences Division (ESD) 58%, and the Fusion Energy Division (FED) 69%.

Overall, only 10% of the respondents reported less than favorable attitudes toward technical editors.

A comparison has also been made between the technical editors' responses on how they believe they are perceived by the scientists or engineers with the scientists'/engineers' actual responses. Thirteen percent of the technical editors predicted that the scientists and engineers had unfavorable attitudes toward technical editors, and thirteen percent predicted highly favorable. This comparison is illustrated in Figure 2. As can be seen in the figure, in most cases the technical editors' responses were very close to the engineers' responses.

Importance of the Services

The majority (55%) of the scientists and engineers felt that the services rendered by technical editors were important to their work, as opposed to 18% who indicated that such services were unimportant (Table 5).

Responsible editors often find themselves in the role of teachers. If an editor does more with a document than correct mistakes in spelling, punctuation, and style, he should be working to improve the writer's ability to communicate. Forty-eight percent of the respondents, however, stated that working with a technical editor had not been beneficial in writing memos and other nontechnical communications that are not normally edited by technical editors (Table 6). Of the 16 questions included in the questionnaire that allowed comparisons of the technical editors' responses with those of the scientists and engineers, Question 9 revealed

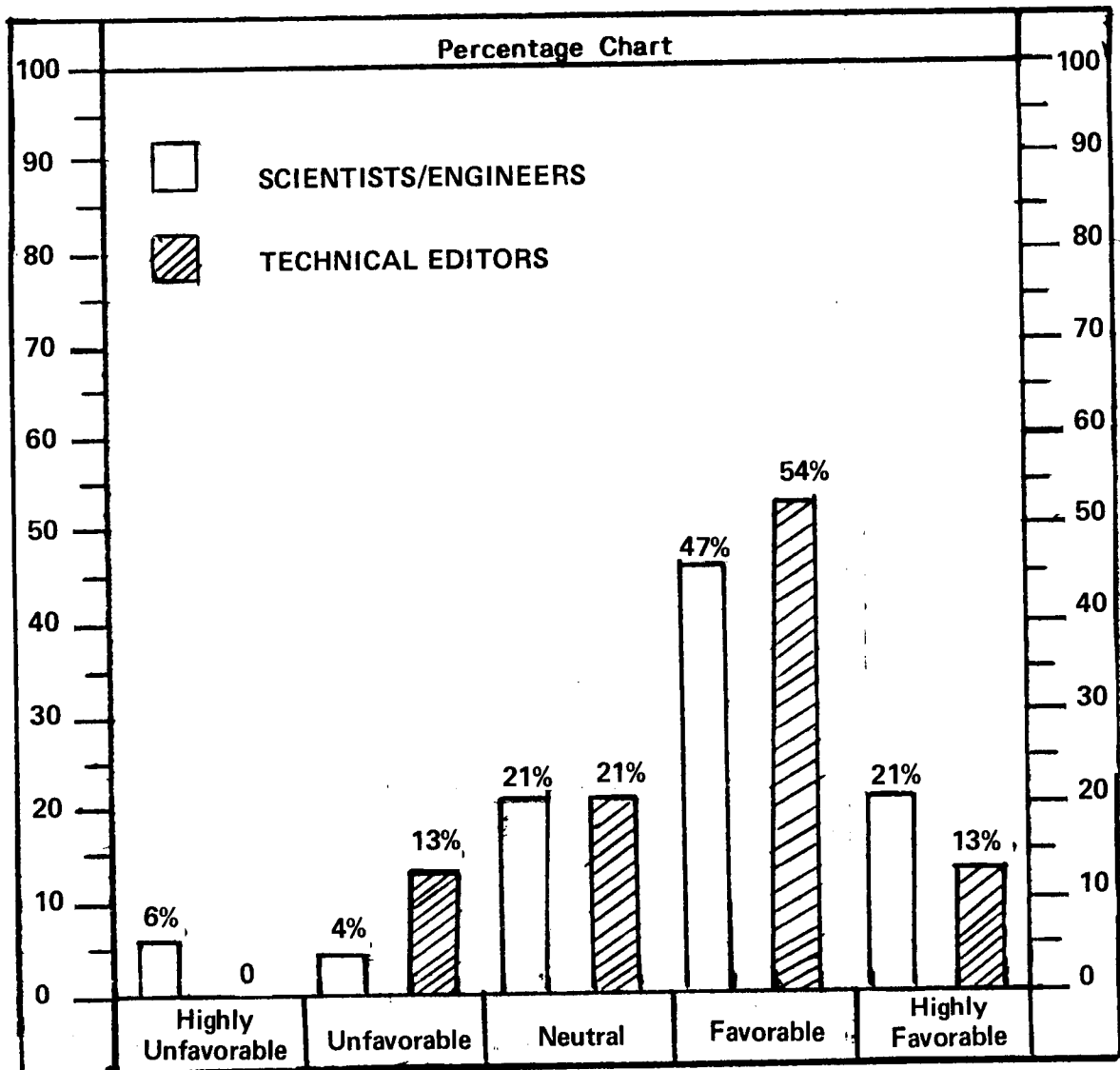


Figure 2. Comparison between technical editors' predictions and actual scientists'/engineers' responses on Question 6--". . . which phrase best reflects your attitude toward technical editors?"

Table 5. Percentage distribution of responses to Question 8--"How important are the services of a technical editor to your work?"

Response	Overall Survey N = 160 (%)	MCD N = 30 (%)	FRD N = 10 (%)	ETD N = 33 (%)	CTD N = 36 (%)	ESD N = 29 (%)	FED N = 22 (%)
Not important	18	37	10	5	8	7	22
Somewhat important	27	37	20	45	8	41	23
Important	41	23	50	41	56	28	50
Very important	14	3	20	9	28	18	5
No response	0	0	0	0	0	6	0
Total	100	100	100	100	100	100	100

Table 6. Percentage distribution of responses to Question 9--"Has the preparation of letters and internal memos (not usually edited) by your office benefited from the experience of working with a technical editor on formal documents?"

Division	Responses			No Response (%)
	No (%)	Yes (%)	Uncertain (%)	
Overall (N = 160)	48	21	27	4
MCD (N = 30)	63	17	17	3
FRD (N = 10)	50	20	30	0
ETD (N = 33)	45	27	24	4
CTD (N = 36)	22	39	36	3
ESD (N = 29)	59	10	28	3
FED (N = 22)	55	0	27	18

the most antithetical opinions (see Figure 3). Whereas 50% of the technical editors thought most scientists and engineers would say their ability to write had improved as a result of working with technical editors, fewer (21%) of the scientists and engineers said that they had noticed improvements in their writing (particularly nontechnical writing) based on their interactions (direct through author-editor conferences, or indirect through reviews of edited reports) with technical editors.

In fact, the relationship was inverse--there were about as many editors who said the engineers had been helped by working with technical editors (see Figure 3) as there were scientists and engineers who said they had not (vice versa). About 30% of both groups noted "uncertain" in response to Question 9.

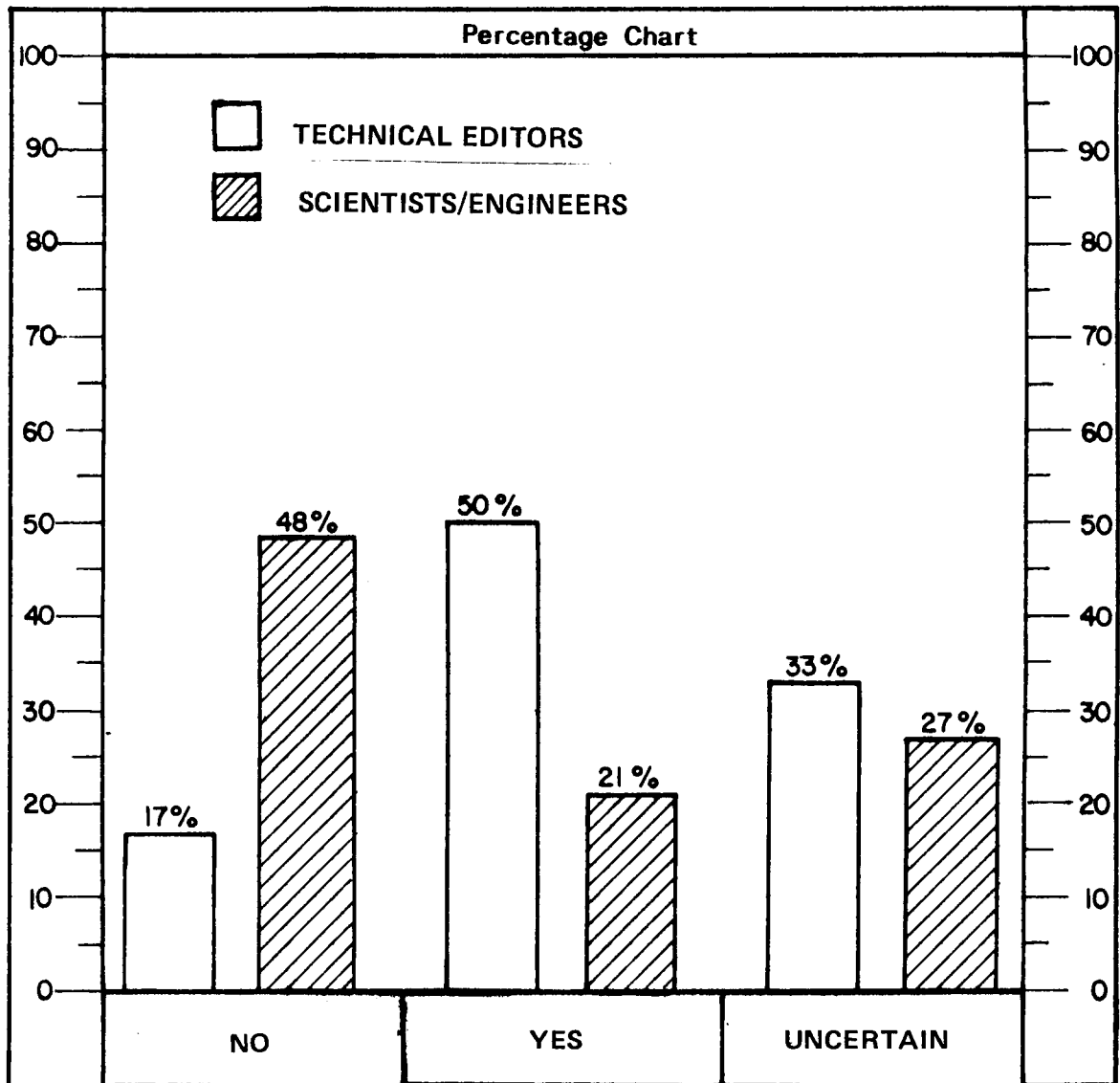


Figure 3. Comparison between technical editors' predictions and actual scientists'/engineers' responses to Question 9--"Has the preparation of letters and internal memos (not normally edited) by your office benefited from the experience of working with a technical editor on formal documents?"

Effect of Computerized Text Editing

Like many other research and development installations (where the writing of technical reports, proposals, memos, etc., is oftentimes dreaded but necessary), Oak Ridge National Laboratory is concerned with the implementation of high-efficiency editing, composition, and word processing systems. Such systems are designed to increase the productivity of typists, secretaries, editors, and even authors capable and desirous of using such systems ("Is This," 1981). "A word processor gives writers a chance to experiment with rewriting and rearranging without retyping or submitting a draft full of arrows, erasures, and notes" ("I Would Kill," 1982).

As discussed in Chapter I (Introduction), it is the TPD's policy to allow an author the opportunity to review his edited text. However, when asked to specify at which stage they preferred to review their edited text (using computerized text editing), 43% of the respondents marked Item 1--that is, the edited, marked-up original. Forty-six percent said that they preferred to see a printout with editorial changes noted, if at all possible, and 7% indicated they would be willing to review a printout of the edited text without editorial markings.

"Although sophisticated computerization and automation continue to have high priority with most management," writes T. R. Walker (1980), "there is a natural resistance to change." Thus, it is natural that some divisions felt stronger about this issue than did others (Table 7). Only seven respondents from a total of three divisions (MCD, CTD, and ESD) preferred to review a printout of the edited text without editorial markings. "In the final analysis," Walker contends, "the success of the

Table 7. Percentage distribution of responses to Question 10--" . . . which would you prefer to review following editing?"

Response	Overall Survey N = 160 (%)	MCD N = 30 (%)	FRD N = 10 (%)	ETD N = 33 (%)	CTD N = 36 (%)	ESD N = 29 (%)	FED N = 22 (%)
Edited (i.e., marked-up) original text	43	36	50	52	36	41	50
Printout of edited text with changes noted	46	47	50	39	50	41	55
Printout of edited text without editorial comments	7	0	0	9	6	7	0
Other	4	7	0	0	0	7	4
No response	0	10	0	0	8	4	0
Total	100	100	100	100	100	100	109 ^a

^aSome respondents marked more than one answer.

use of computers depends on the caliber and conscientiousness of those who make them work."

A comparison between the distribution of technical editors' responses and the scientists/engineers' responses is shown in Figure 4. For the most part, the editors' predictions were similar to the actual responses given by the scientists and engineers. Such close answers imply that the editors, at least in regards to this question (Number 10), are attuned to some of the engineers' and scientists' preferences.

In-Depth Editing

An even stronger opinion than the one expressed in Question 10 was voiced in response to Question 11: "Based on your experience with ORNL technical editors, what is your reaction to in-depth editing, that is, the rewriting and restructuring of perhaps large segments of your documents?" Sixty-seven percent of the scientists and engineers indicated that they either strongly or mildly opposed in-depth editing. Again, the technical editors' predictions were similar to the responses of the scientists and engineers. Fifty-four percent of the editors predicted opposition to in-depth editing. However, the percentage of editors who thought more of the engineers "favored" in-depth editing was somewhat higher (25% versus 13%) than the engineers' and scientists' actual responses (Figure 5).

Question 11 was followed by an open-ended question soliciting, among other things, specific circumstances under which in-depth editing would be permissible or desired. Although only 13% favored such detailed editing (see Table 8), most of the respondents who had opposed in-depth

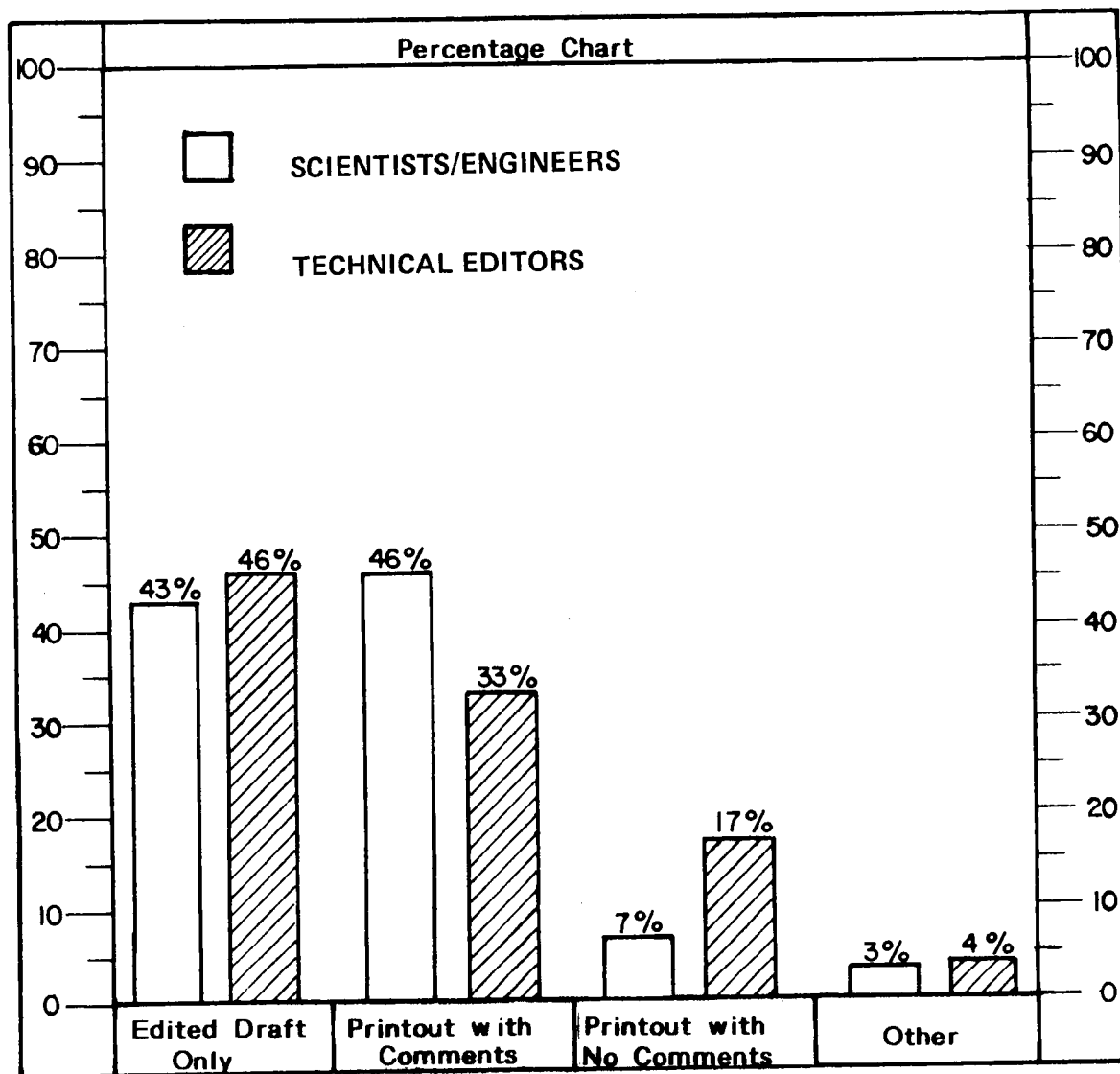


Figure 4. Comparison between technical editors' predictions and actual scientists'/engineers' responses to Question 10--". . . which would you prefer to review following editing?"

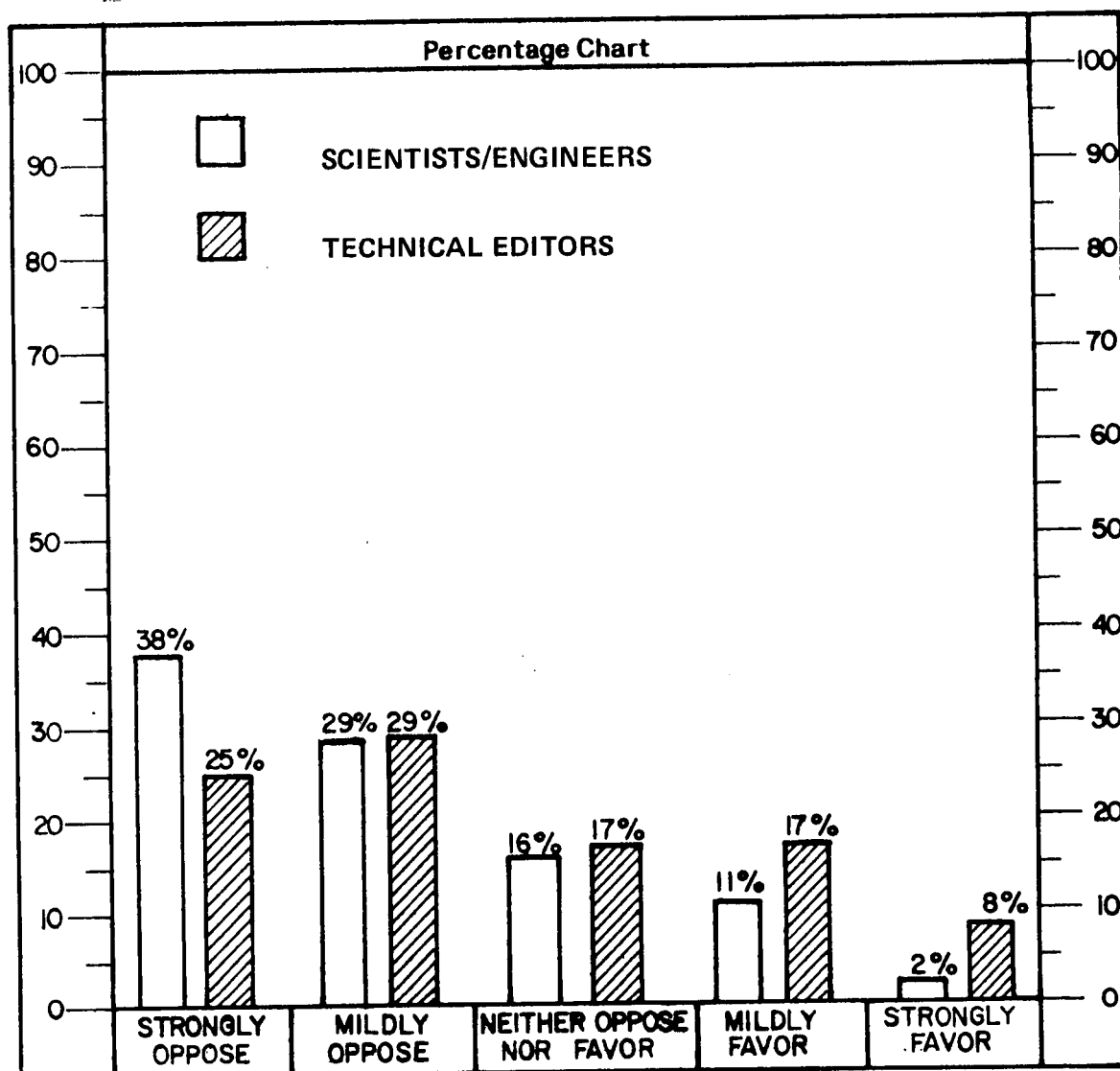


Figure 5. Comparison between technical editors' predictions and actual scientists'/engineers' responses to Question 11--"Based on your experience with ORNL technical editors, what is your reaction to in-depth editing, that is, the rewriting and restructuring of perhaps large segments of your document?"

Table 8. Percentage distribution of responses to Question 11--"... what is your reaction to 'in-depth' editing, that is, the rewriting and restructuring of perhaps large segments of your document?"

Response	Overall Survey N = 160						CTD		ESD		FED	
	(%)	MCD N = 30	FRD N = 10	ETD N = 33	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Strongly oppose	38	53	10	33	31	41	45					
Mildly oppose	29	17	60	27	36	24	32					
Neither oppose nor favor	16	17	10	18	17	17	14					
Mildly favor	11	0	20	18	14	7	9					
Strongly favor	2	3	0	3	0	7	0					
No responses	4	10	0	1	2	4	0					
Total	100	100	100	100	100	100	100					

editing (67%) made allowances for such editing, the most frequent being, "Yes, if I can review after in-depth editing is performed." Whereas most were willing to make such exceptions, verbatim responses (shown in Appendix E), reflect an unquestionable need for editing.

Ranking of Key Items of Interest

In Question 13, the scientists and engineers were asked to rank, in order of importance, such items as clarity, organization, appearance of document, grammar, cost, and technical accuracy. These items are known hereafter as "key items of interest." Although most are specifically concerns of the technical editor, they are also important in order to determine what is most important to the scientists and engineers at ORNL. As is shown in Table 9, most of the scientists and engineers ranked technical accuracy as the most important item, whereas cost appears to be the least important factor in processing reports.

Respondents were asked to assign a numerical value to each of the items listed. For example, if clarity was considered most important, it was assigned Number 5. Then each point value assigned to clarity (by each respondent) was added together to give a sum weight. The sum weight of each item was then ranked, the highest sum weight was the most important item, the next highest (sum weight) was next in importance, etc. For a comparison of how each of the participating divisions ranked the importance of these items, rankings by division are shown in Table 10.

Ranking of Courses

The same formula used in the preceding section was used in Question 14. Most of the respondents (in each division) ranked English

Table 9. Overall ranking of items of interest

Rank	Item	Sum Weight
1	Technical Accuracy	713
2	Clarity	662
3	Grammar and Syntax	620
4	Mechanics (Punctuation etc.)	571
5	Organization	533
6	Style and Tone	526
7	Appearance	485
8	Schedules and Deadlines	475
9	Cost	334

Table 10. Ranking of key items of interest by division^a

Division	Grammar and Syntax	Mechanics	Style/ Tone		Clarity	Organization	Appearance	Schedules	Technical	
									Accuracy	Cost
MCD	3 (114)	5 (100)	6 (90)	1 ^b (132)	4 (106)	8 (83)	7 (88)	1 ^b (132)	9 (45)	
FRD	1 (40)	2 ^b (37)	8 (24)	4 (35)	5 (30)	6 ^b (29)	6 ^b (29)	2 ^b (37)	9 (23)	
ESD	3 (122)	5 (107)	4 (108)	1 (137)	6 (102)	8 (84)	7 (92)	2 (129)	9 (74)	
FED	3 (85)	4 ^b (77)	2 (97)	8 (50)	7 (66)	4 ^b (77)	6 (74)	1 (105)	9 (26)	
ETD	4 ^b (107)	4 ^b (107)	7 (94)	1 (141)	3 (111)	6 (95)	8 (80)	2 (140)	9 (66)	
CTD	3 (152)	4 (143)	7 (113)	2 (167)	5 (118)	6 (117)	8 (112)	1 (170)	9 (100)	
Overall	3 (620)	4 (571)	6 (526)	2 (662)	5 (533)	7 (485)	8 (475)	1 (713)	9 (334)	

^aSum weights are given in parentheses.^bTie--these numbers had the same number of summary points.

as the most important course (Tables 11 and B.8). Journalism was ranked second and engineering third.

Suggestions for Additional Services

When asked, "How can the technical editor better serve you? What additional sources would you like to see offered by a technical editor?," most respondents suggested the following: writing assistance, editing of slides and visuals, faster turnaround, and formal or informal courses/seminars on grammar.

Verbatim comments concerning additional services and opinions regarding the present services are given in Appendix E.

Table 11. Ranking of courses by division^a

Division	Math	English	Engineering	Physics	Chemistry	Journalism
MCD	6 (72)	1 (135)	3 (99)	5 (80)	4 (84)	2 (100)
FRD	6 (22)	1 (51)	2 ^b (32)	5 (30)	2 ^b (32)	4 (31)
CTD	4 (84)	1 (179)	2 (121)	5 (80)	6 (73)	3 (118)
ESD	3 (75)	1 (156)	6 (48)	5 (53)	4 (56)	2 (110)
FED	3 (72)	1 (113)	5 (64)	4 (66)	6 (44)	2 (78)
ETD	4 (83)	1 (173)	2 (119)	5 (75)	6 (46)	3 (115)
Overall	4 (408)	1 (807)	3 (483)	5 (384)	6 (335)	2 (552)

^aSum weights given in parentheses.

^bTie--these numbers had the same number of summary points.

Responses by Profession

The responses (by profession) to each question yielded some interesting statistics. For example, the percentage of chemists and engineers who felt that working with a technical editor was beneficial in their less formal, daily writing, was considerably higher than the combined percentage of biologists and physicists (Table B.3).

In response to Question 6, the physicists and engineers appear to have more favorable attitudes toward technical editors. The physicists and engineers also felt that the services were important to their work.

Although the physicists indicated more "willingness" in trying editing via computer (i.e., without seeing original drafts), it was the physicists and chemists who indicated strongest opposition to in-depth editing.

The results of ranking (1) key items of interest (e.g., editing mechanics, costs, etc.) and (2) relevant courses did not vary significantly from the overall survey. In both cases, respondents from each discipline (i.e., chemists, biologists, etc.) indicated that technical accuracy and English were most important in Questions 13 and 14, respectively.

Responses from Technical Editors

At last the question of professionalism is put before the scientist/engineer. And, contrary to what is implied by the current literature, the scientists and engineers said, "Yes, we see technical editors as professionals."

Although the topic has been a popular one over recent years, the technical editors responding to the survey indicated not only that they

believe the scientists at ORNL see them as professionals, but also that the services rendered by technical editors are important to these scientists.

The one question in which the engineers and editors showed the greatest differences of opinion was Question 9: "Has the preparation of letters and internal memos (prepared by your office and not usually edited) benefited from the experience of working with a technical editor on formal documents?" The editors said "yes"; the engineers said "no."

It appears that the technical editor at ORNL does know the ORNL engineer and scientist, because the percentages of technical editors' predictions of responses were comparable, sometimes quite closely (see Figure 2, p. 23), to the actual responses of the scientists and engineers.

Responses from Division Directors

Almost all (seven of nine) of the division directors have worked with a technical editor, and all nine said that they saw the technical editor as a professional. It also appears that the division directors are frequent users of the services of the technical editor because most of the reports published in FY 1980 had been edited.

As was expected, the attitudes toward technical editors are favorable, and the services are considered important to the work of division directors at ORNL. But, unlike the scientists and engineers, most of the division directors responding reported that they preferred to see a printout of the edited text.

In Question 13, clarity and technical accuracy were ranked most important by the division directors (same as scientists and engineers),

and English and journalism (Question 14) were the top ranking courses recommended for the technical editor's curriculum.

Responses to the division directors' survey are shown in summary form in Appendix D. (Note: Two of the fourteen division directors interviewed chose not to participate.)

CHAPTER IV

CONCLUSIONS

Scientists and engineers at ORNL, most of whom have worked with technical editors, see the technical editor as a professional.

However, one would expect that by working closely with a technical editor, who functions somewhat as an educator, that many of the rules governing grammar, spelling, punctuation, and capitalization would be "carried over" to other aspects of communication, such as memo writing and preparation of slides, speeches, and informal reports. Yet, according to the results gathered, this was not found to be true of the scientists and engineers at ORNL. Most of the participants reported that their informal communication had not benefited from the experience of working with technical editors.

The technical editor could be looked upon (and rightfully so) as a pseudo-teacher. But, if the data obtained concerning this lack of "carry-over" is correct, and if the author is not learning from this close, professional working relationship, then some means of teaching the scientist to write should be considered.

Despite the fact that most respondents felt that their personal as well as nontechnical, interpersonal communication had not benefited by working with technical editors, the majority reported that (1) the technical editors' services were of importance in the dissemination of technical information, and (2) their attitudes, overall, were favorable toward technical editors.

Question 10 concerning the use of computers and terminals for editing was particularly relevant to the study because computerized text-editing is somewhat inevitable. New and improved word processing equipment is steadily flooding the market, and most companies concerned with productivity are interested in that market.

Overall, responses to both Questions 10 and 11 suggest somewhat of a contradiction in the question of professionalism. For example, although favorable attitudes toward technical editors were reported and technical editors were seen as professionals, most of the respondents preferred (1) to see the original marked-up manuscripts and (2) that editors do not perform in-depth editing. Thus, it appears that there is yet a lack of confidence on the part of the scientist/engineer in believing that the technical editor, using his or her training and experience, will make sound, professional judgment when editing manuscripts. "Successful authors trust their editors--sure of their own expertise, they respect another person's judgment" (Osborne, 1981).

This "contradiction" exists perhaps because such words as "professional" and "attitude" were not clearly defined. In essence, the scientists and engineers reported that (1) they see the technical editors as professionals, and (2) the technical editor's work is of value to their (the scientists' and engineers') work, but also that they were reluctant to have technical editors restructure or rewrite parts of their documents.

If, in fact, this is the attitude of the ORNL scientists and engineers, then perhaps (1) the technical editors need to strengthen their scientific backgrounds (Note: the scientists and engineers

reported that English and communications courses should be most important to technical editors' curriculums) and (2) technical editors should strive for more open communication with their authors, and, if possible, raise the level of credibility of technical editors in general, for example, by offering suggestions on how the author's writing might be improved rather than rewriting passages for him.

The purpose of the technical editors' survey was to find out how technical editors felt they are perceived by scientists and engineers at ORNL. Therefore, finding that the technical editors' responses were very much in line with the scientists' and engineers' responses was a positive factor. Thus, the technical editors are better able to meet the needs of service users.

The findings of the division directors' survey were also very positive. The attitudes toward technical editors were favorable, the services were of importance (at least to those presently using the technical editing services), and each of the ORNL division directors participating reported that they saw the technical editor as a professional.

Unfortunately, the questionnaire did not lend itself to finding out why some division directors did not have specific publication offices. However, a comparison between the division director's responses with his division is possible using the data gathered in this survey.

Recommendations for Future Study

A considerable amount of information concerning the attitudes and perceptions that scientists and engineers have toward technical editors has been compiled as a result of this study. Much of this information could be used as a basis for extending this study into a detailed look

at the relationship between technical editors and scientists and engineers. For example,

1. A cross tabulation can be made of each participant's responses to determine consistency of attitudes (e.g., some respondents who had reported that they had positive attitudes toward technical editors said no, they did not see the technical editor as a professional).

2. The various backgrounds of technical editors can be studied. What are the trends--the academic backgrounds--of technical editors today? What were the trends ten years ago? Twenty-five years ago?

3. As mentioned earlier, a detailed study can be made comparing the division director's responses with the responses of his division, and

4. A study could also be performed to determine how scientists and engineers are perceived by technical editors.

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APPENDIX A

SCIENTISTS' AND ENGINEERS' QUESTIONNAIRE
AND COVER LETTER

INTRA-LABORATORY CORRESPONDENCE

OAK RIDGE NATIONAL LABORATORY

November 30, 1981

TO:

FROM: R. V. Clark (Building 7601) *RVC*

I am seeking answers to questions designed to determine (1) the needs, strengths, and weaknesses of the technical editor (as you see them), and (2) your attitude toward the technical editor.

Please complete the enclosed questionnaire and return it to me in the attached envelope by December 16. (Even though you may not have had any experience with a technical editor, your response will be appreciated.)

Individual responses will be kept confidential; only summary information will be published. Thank you for your time and cooperation.

RVC:tw

SURVEY QUESTIONNAIRE**Metals and Ceramics Division**

1. Based on your experience and education, how do you classify yourself? (Circle number.)
 - 1 BIOLOGIST
 - 2 CHEMIST
 - 3 ENGINEER (Please specify.) _____
 - 4 PHYSICIST
 - 5 OTHER (Please specify.) _____
2. How many years of professional experience have you had? (Include industrial, business, consulting, government, management, and teaching experience.)
____ YEARS
3. Have you ever worked with a technical editor? (Circle number.)
 - 1 NO
 - 2 YES
4. Approximately how many reports did you publish (as author or coauthor) during FY-1980?
____ ORNL TOPICALS
____ INTERNAL/INFORMAL MEMORANDUMS
____ OPEN LITERATURE CONTRIBUTIONS
5. How many of the above reports were edited by a technical editor?
____ ORNL TOPICALS
____ INTERNAL/INFORMAL MEMORANDUMS
____ OPEN LITERATURE CONTRIBUTIONS
6. Of the following, which phrase best reflects your attitude toward technical editors? (Circle number.)
 - 1 HIGHLY UNFAVORABLE
 - 2 UNFAVORABLE
 - 3 NEUTRAL
 - 4 FAVORABLE
 - 5 HIGHLY FAVORABLE
7. Do you see the technical editor as a professional? (Circle number.)
 - 1 NO
 - 2 YES
8. How important are the services of a technical editor to your work? (Circle number.)
 - 1 NOT IMPORTANT
 - 2 SOMEWHAT IMPORTANT
 - 3 IMPORTANT
 - 4 VERY IMPORTANT

(Continued on next page.)

9. Has the preparation of letters and internal memos (not usually edited) by your office benefitted from the experience of working with a technical editor on formal documents? (Circle number.)
- 1 NO
 - 2 YES
 - 3 UNCERTAIN
10. With the advent of the proposed computerized text-editing equipment (ORNL Review, Summer 1981), which would you prefer to review following editing? (Circle number.)
- 1 EDITED (i.e., MARKED-UP) ORIGINAL TEXT
 - 2 PRINTOUT OF EDITED TEXT WITH CHANGES NOTED
 - 3 PRINTOUT OF EDITED TEXT WITHOUT EDITORIAL COMMENTS
 - 4 OTHER (Please specify.) _____
11. Based on your experience with ORNL technical editors, what is your reaction to "in-depth" editing, that is, the rewriting and restructuring of perhaps large segments of your document? (Circle number.)
- 1 STRONGLY OPPOSE
 - 2 MILDLY OPPOSE
 - 3 NEITHER OPPOSE NOR FAVOR
 - 4 MILDLY FAVOR
 - 5 STRONGLY FAVOR
12. If your answer to question 11 is either 1 or 2, under what circumstances, if any, would you permit a technical editor to perform "in-depth" editing? _____

13. How important are each of the following items to you? Use a scale of 1 to 5, with 5 being most important and 1 being least important.
- _____ GRAMMAR AND SYNTAX
 - _____ MECHANICS (PUNCTUATION, ABBREVIATIONS, CAPITALIZATION, etc.)
 - _____ STYLE AND TONE OF EXPRESSION
 - _____ CLARITY OF EXPRESSION
 - _____ ORGANIZATION OF REPORTS AND OTHER COMMUNICATIONS
 - _____ APPEARANCE OF DOCUMENT
 - _____ SCHEDULES AND DEADLINES
 - _____ TECHNICAL ACCURACY
 - _____ COST
14. What kinds of courses (or background) do you feel the technical editor should have? Rate each of the following using a scale of 1 to 6, with 6 being most important and 1 being least important.
- | | |
|-------------------|------------------|
| _____ MATHEMATICS | _____ PHYSICS |
| _____ ENGLISH | _____ CHEMISTRY |
| _____ ENGINEERING | _____ JOURNALISM |
15. How can the technical editor better serve you? What additional services, if any, would you like to see offered by a technical editor (e.g., writing assistance, editing of word slides, etc.)? _____

INTRA-LABORATORY CORRESPONDENCE

OAK RIDGE NATIONAL LABORATORY

December 8, 1981

TO: Participants in the Editorial Services
Survey

FROM: R. V. Clark, Information Division *ROC*

My thanks to those of you who have taken the time to complete the questionnaire recently sent to you. This information will be most helpful in determining your needs concerning writing and editing services at ORNL.

Although the response rate thus far has been impressive, there are still a few questionnaires yet to be returned. If you have not completed yours, please do so at your earliest convenience.

Thank you.

APPENDIX B

RESPONSES BY PROFESSION

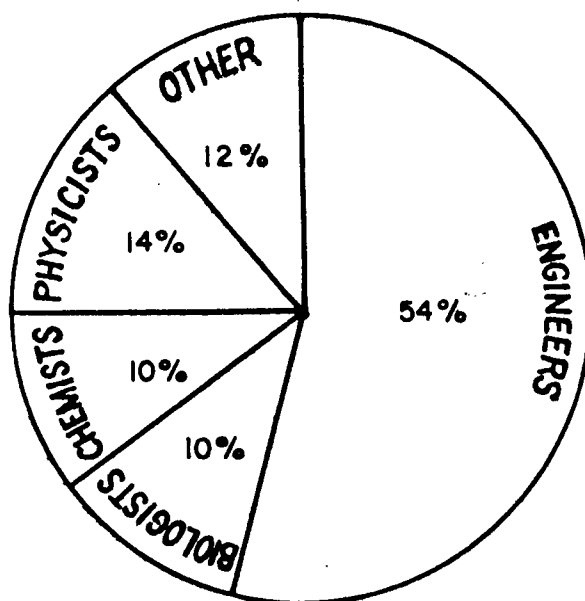


Figure B.1. Distribution of respondents by profession.

Table B.1. Responses concerning usage of technical editing services and general perceptions of technical editors

Profession	Q.3. No. Respondents Who Have Worked with Technical Editors (%)	Q.7. No. Respondents Who See Technical Editors as Professionals (%)
Biologists (N = 17) ^a	94	65
Chemists (N = 16)	75	75
Engineers (N = 87)	83	86
Physicists (N = 23)	78	83
Other (N = 18)	83	63

^aN = Number of respondents.

Table B.2. Percentage distribution (by profession) of responses to Question 6--". . . which phrase best reflects your attitude toward technical editors?"

Response	Biologists (%)	Chemists (%)	Engineers (%)	Physicists (%)	Other (%)
Highly unfavorable	12	13	8	0	5
Unfavorable	6	0	3	9	0
Neutral	29	19	17	22	32
Favorable	29	38	51	60	37
Highly favorable	18	13	23	9	16
No response	6	17	1	0	10

Table B.3. Percentage distribution (by profession) of responses to Question 8--"How important are the services of a technical editor to your work?"

Response	Biologists ^a (%)	Chemists ^a (%)	Engineers ^a (%)	Physicists (%)	Other (%)
Not important	12	25	13	9	47
Somewhat important	53	13	30	30	26
Important	18	38	45	61	16
Very important	18	25	16	0	11

^aThese percentages (total) exceed 100 because some respondents marked multiple answers.

Table B.4. Percentage distribution (by profession) of responses to Question 9--"Has the preparation of letters and internal memos (not usually edited) by your office benefited from the experience of working with a technical editor on formal documents?"

Profession	No (%)	Yes (%)	Uncertain (%)	No Response
Biologists	47	12	35	6
Chemists	38	25	35	2
Engineers	25	25	22	28
Physicists	50	9	39	2
Other	63	16	21	0

Table B.5. Percentage distribution (by profession) of responses to Question 10--". . . which would you prefer to review following editing?"

Response	Biologists (%)	Chemists (%)	Engineers (%)	Physicists (%)	Other (%)
Edited (i.e., marked-up) original text	53	44	45	57	16
Printout of edited text with changes noted	29	44	45	43	63
Printout of edited text without editorial markings	12	0	6	0	0
Other	6	0	2	0	16
No response	0	12	2	0	5

Table B.6. Percentage distribution (by profession) of responses to Question 11--". . . what is your reaction to 'in-depth' editing, that is, the rewriting and restructuring of perhaps large segments of your documents?"

Response	Biologists (%)	Chemists (%)	Engineers (%)	Physicists (%)	Other (%)
Strongly oppose	59	25	32	61	37
Mildly oppose	12	38	31	26	32
Neither oppose nor favor	18	25	18	4	16
Mildly favor	6	6	16	0	5
Strongly favor	6	0	2	0	0
No response	0	6	1	8	10

Table B.7. Ranking of key items of interest by profession^a

Profession	Grammar and Syntax	Mechanics	Style/ Tone	Clarity	Organization	Appearance	Schedules	Technical	
								Accuracy	Cost
Biologists	4 (70)	6 (66)	3 (74)	1 ^b (83)	5 (68)	8 (56)	7 (57)	1 ^b (83)	9 ((43)
Chemists	2 (60)	4 (53)	5 (43)	1 (61)	6 ^b (37)	8 (35)	6 ^b (37)	3 (58)	9 (21)
Engineers	3 (326)	5 (313)	6 (270)	2 (342)	4 (315)	7 (264)	8 (250)	1 (378)	9 (217)
Physicists	3 (110)	4 (92)	7 (86)	2 (120)	6 (87)	8 (79)	5 (90)	1 (130)	9 (58)
Other	3 (76)	5 (69)	7 (61)	2 (91)	4 (70)	9 (53)	6 (62)	1 (92)	8 (54)

^aActual sum weights shown in parentheses.

^bTie--these numbers had the same number of summary points.

Table B.8. Ranking of courses by profession^a

Profession	Math	English	Engineering	Physics	Chemistry	Journalism
Biologists	3 (44)	1 (94)	6 (19)	5 (24)	4 (30)	2 (61)
Chemists	5 (38)	1 (68)	4 (40)	6 (35)	3 (42)	2 (54)
Engineers	4 (215)	1 (442)	3 (294)	5 (214)	6 (190)	2 (305)
Physicists	2 (94)	1 (148)	5 (81)	3 (89)	6 (68)	4 (84)
Other	4 (51)	1 (93)	3 (56)	6 (44)	5 (48)	2 (70)
Overall	4 (442)	1 (845)	3 (490)	6 (325)	5 (378)	2 (574)

^aActual sum weights shown in parentheses.

APPENDIX C

TECHNICAL EDITORS' RESPONSES

INTRA-LABORATORY CORRESPONDENCE

OAK RIDGE NATIONAL LABORATORY

November 18, 1981

TO:

FROM: Regina V. Clark
(Bldg. 7601)

In the past few years, there has been an increased emphasis regarding the professional status of technical editors. Numerous articles have been published on the subject, and the Society for Technical Communication even chose the issue as the main topic of one of its recent international communication conferences.

The enclosed questionnaire is similar to one being sent to the various members of the technical staff here to determine their perceptions of technical editors. The objective of this survey is, however, to find out how technical editors think they are perceived by engineers/scientists.

Please complete the enclosed questionnaire as you think the engineers/scientists here at ORNL will answer. Please return your completed questionnaire to me by December 7.

Thank you.

SURVEY QUESTIONNAIRE

1. Of the following, which phrase best reflects your attitude toward technical editors? (Circle number.)

1 HIGHLY UNFAVORABLE	0
2 UNFAVORABLE	3 (13)
3 NEUTRAL	5 (21)
4 FAVORABLE	13 (54)
5 HIGHLY FAVORABLE	3 (13)

2. Do you see the technical editor as a professional? (Circle number.)

1 NO	6 (25)
2 YES	18 (75)

3. How important are the services of a technical editor to your work? (Circle number.)

1 NOT IMPORTANT	0
2 SOMEWHAT IMPORTANT	11 (46)
3 IMPORTANT	11 (46)
4 VERY IMPORTANT	2 (8)

4. Has the preparation of letters and internal memos (not usually edited) by your office benefitted from the experience of working with a technical editor on formal documents? (Circle number.)

1 NO	4 (17)
2 YES	12 (50)
3 UNCERTAIN	8 (33)

5. With the advent of the proposed computerized text-editing equipment (ORNL Review, Summer 1981), which would you prefer to review following editing? (Circle number.)

1 EDITED (i.e., MARKED-UP) ORIGINAL TEXT	11 (46)
2 PRINTOUT OF EDITED TEXT WITH CHANGES NOTED	8 (33)
3 PRINTOUT OF EDITED TEXT WITHOUT EDITORIAL COMMENTS	4 (17)
4 OTHER (Please specify.) _____	1 (4)

6. Based on your experience with ORNL technical editors, what is your reaction to "in-depth" editing, that is, the rewriting and restructuring of perhaps large segments of your document? (Circle number.)

1 STRONGLY OPPOSE	6 (25)
2 MILDLY OPPOSE	7 (29)
3 NEITHER OPPOSE NOR FAVOR	4 (17)
4 MILDLY FAVOR	4 (17)
5 STRONGLY FAVOR	2 (8)

7. If your answer to question 6 is either 1 or 2, under what circumstances, if any, would you permit a technical editor to perform "in-depth" editing? Not applicable

8. How important are each of the following items to you? Use a scale of 1 to 5, with 5 being most important and 1 being least important.

1. TECHNICAL ACCURACY	
2. SCHEDULES/DEADLINES	
3. CLARITY	
4. GRAMMAR/SYNTAX	
5. COST	
6. ORGANIZATION	
7. MECHANICS	} TIE
8. APPEARANCE	
9. STYLE/TONE	

(Continued on next page.)

9. What kinds of courses (or background) do you feel the technical editor should have? Rate each of the following using a scale of 1 to 6, with 6 being most important and 1 being least important.

ENGLISH	MATH
ENGINEERING	PHYSICS
CHEMISTRY	JOURNALISM

10. How can the technical editor better serve you? What additional services, if any, would you like to see offered by a technical editor (e.g., writing assistance, editing of word slides, etc.)? _____
Not applicable _____

APPENDIX D

DIVISION DIRECTORS' RESPONSES

INTRA-LABORATORY CORRESPONDENCE

OAK RIDGE NATIONAL LABORATORY

December 2, 1981

TO: Distribution

FROM: R. V. Clark, Information Division *etc*

As I mentioned in my telephone conversations with you, I am interested in your opinions as division directors, regarding the needs, strengths, and weaknesses of technical editors. I have attached a questionnaire, which is identical to those being completed by 230 randomly selected participants throughout the Laboratory. Please return the completed forms to me by December 18. My address is shown on the reverse side of the second page.

Thank you for your interest, time, and cooperation.

SURVEY QUESTIONNAIRE

1. Based on your experience and education, how do you classify yourself? (Circle number.)

1	BIOLOGIST	1
2	CHEMIST	1
3	ENGINEER (Please specify.) _____	5
4	PHYSICIST	1
5	OTHER (Please specify.) _____	2

2. How many years of professional experience have you had? (Include industrial, business, consulting, government, management, and teaching experience.)

_____ YEARS	MINIMUM	18
	MAXIMUM	37
	MEAN	30.1

3. Have you ever worked with a technical editor? (Circle number.)

1	NO	2
2	YES	9

4. Approximately how many reports did you publish (as author or coauthor) during FY-1980?

_____ ORNL TOPICALS	2
_____ INTERNAL/INFORMAL MEMORANDUMS	12
_____ OPEN LITERATURE CONTRIBUTIONS	14

5. How many of the above reports were edited by a technical editor?

_____ ORNL TOPICALS	2
_____ INTERNAL/INFORMAL MEMORANDUMS	10
_____ OPEN LITERATURE CONTRIBUTIONS	6

6. Of the following, which phrase best reflects your attitude toward technical editors? (Circle number.)

1	HIGHLY UNFAVORABLE	0
2	UNFAVORABLE	0
3	NEUTRAL	2
4	FAVORABLE	4
5	HIGHLY FAVORABLE	3

7. Do you see the technical editor as a professional? (Circle number.)

1	NO	0
2	YES	9

8. How important are the services of a technical editor to your work? (Circle number.)

1	NOT IMPORTANT	2
2	SOMEWHAT IMPORTANT	1
3	IMPORTANT	2
4	VERY IMPORTANT	5

(Continued on next page.)

9. Has the preparation of letters and internal memos (not usually edited) by your office benefitted from the experience of working with a technical editor on formal documents? (Circle number.)

1 NO	4
2 YES	3
3 UNCERTAIN	3

10. With the advent of the proposed computerized text-editing equipment (ORNL Review, Summer 1981), which would you prefer to review following editing? (Circle number.)

1 EDITED (i.e., MARKED-UP) ORIGINAL TEXT	2
2 PRINTOUT OF EDITED TEXT WITH CHANGES NOTED	7
3 PRINTOUT OF EDITED TEXT WITHOUT EDITORIAL COMMENTS	1
4 OTHER (Please specify.) _____	0

11. Based on your experience with ORNL technical editors, what is your reaction to "in-depth" editing, that is, the rewriting and restructuring of perhaps large segments of your document? (Circle number.)

1 STRONGLY OPPOSE	1
2 MILDLY OPPOSE	3
3 NEITHER OPPOSE NOR FAVOR	4
4 MILDLY FAVOR	0
5 STRONGLY FAVOR	1

12. If your answer to question 11 is either 1 or 2, under what circumstances, if any, would you permit a technical editor to perform "in-depth" editing? _____
Not applicable

13. How important are each of the following items to you? Use a scale of 1 to 5, with 5 being most important and 1 being least important.

1. CLARITY	} TIE
2. TECHNICAL ACCURACY	
3. GRAMMAR AND SYNTAX	} TIE
4. APPEARANCE OF DOCUMENT	
5. SCHEDULES AND DEADLINES	
6. MECHANICS	} TIE
7. ORGANIZATION	
8. COST	
9. STYLE/TONE	

14. What kinds of courses (or background) do you feel the technical editor should have? Rate each of the following using a scale of 1 to 6, with 6 being most important and 1 being least important.

ENGLISH	PHYSICS
JOURNALISM	CHEMISTRY
ENGINEERING	MATHEMATICS

15. How can the technical editor better serve you? What additional services, if any, would you like to see offered by a technical editor (e.g., writing assistance, editing of word slides, etc.)? _____
Not applicable

APPENDIX E

VERBATIM COMMENTS FROM SCIENTISTS
AND ENGINEERS

Table E.1. Verbatim^a responses to Question 12, "... under what circumstances, if any, would you permit a technical editor to perform 'in-depth' editing?"

Respondent No.	Response
1	If technical editor were a permanent member of the research team.
2	None. It is very difficult for a non-scientist to alter good scientific writing without changing the meaning and precision of expression. My writing is not without structural flaw but it is scientifically precise.
3	Only if the editor has the combination of editing skills and technical background necessary.
4	If technical editor has expertize or training in subject area.
5	Under no circumstances.
6	No experiance recently - - but oppose unless consulted beforehand. Only with consultation prior to editing.
7	Only under my supervision and with me making final approval of edited section.
8	After discussing the reason for possible "in-depth" changes.
9	The prime author is responsible for the manuscript. Suggestions by others, including technical editors, should be considered by the author and used only if he/she agrees
10	Generally not at all! I believe my professional responsibilities include writing about my work. If my reports are not fairly well written, I should learn the appropriate techniques!

^aIncludes misspelled words, if any.

Table E.2. Verbatim^a responses to Question 15, "How can the technical editor better serve you?"

Respondent No.	Response
1	Service is excellent at present.
2	Writing assistance to poor writers.
3	It appears ok as is.
4	We need technical writers more than technical editors.
5	Writing assistance - - could be very helpful. Assistance in formatting and organizing large reports could also be very helpful. If help could be available at the initiation of a project.
6	I think they have done an excellent job particular during rush or top priorities assignments when little time is available.
7	Fast "turnaround" time. My comments are based mostly as a manager whose staff needs range from unneeded to highly needed for technical editing. I personally is mildly in favor if I could get fast response time.
8	I believe that (1) staff (should) are hired with good writing skills. (2) They are encouraged to develop those skills while at ORNL, and (3) the role of the technical editor is to insure that documents are grammatically correct. It is not the job of technical editors to translate manuscripts into the organized framework required by the publication. Specialization costs money.
9	Timely response to deadlines and an attitude of professional helpfulness. Frankly, I find technical editing to largely be a waste of money and would be for minimizing the function of the technical editor in our division to as great an extent as possible.
10	The staff would benefit from some formal or informal education in writing English. The influence of the editor could help here - - that is, the editor could alert authors to the principles of grammar and style, and perhaps begin to raise the general level of competence in the division. I've reviewed many papers and read many reports and memos, and there are some among us who can't construct a sentence. let alone a paragraph.

Table E.2. (Continued)

Respondent No.	Response
11	Consultation — help with technical oral presentations in slides and structure.
12	By understanding that the author is in charge of the manuscript/report/paper.
13	I believe we should require (as we once did) our engineers and scientists to have the necessary writing skills to prepare comprehensible documents. Editors are needed only for correction of fine details, and these corrections should be few in number.
14	Are editors available as consultants? Can I use these people as resources while I am writing a first draft, to help with questions concerning grammar and style? This would save time for both of us.
15	Writing assistance, proofreading viewgraphs/slides.
16	(1) Complete make up services (2) Preparation of quality visual aids (3) Concentrate on clarity, grammar, and syntax leave style alone.
17	I would like technical editors to check the work for spelling, grammar, syntax, mechanics, organization, and self consistency; but not to rewrite material about which they have no technical knowledge - - just to make it more "literary". In general, "He who edits least, edits best."
18	An editor must be able to exercise judgment as to the degree of editing suggested. The editing standards applied to a CF document should not be as stringent as those applied to a manuscript for publication in a technical journal.
19	There is too much a backlog of paper in their office. We need more editors.
20	Writing assistance, personal consultation — in case the author hasn't taken any course in Technical Writing, and even after taking it.

^aIncludes misspelled words, if any.

VITA

Regina Vincent Clark was born in Talladega, Alabama, on February 1, 1954. She attended Westside Elementary and Junior High School and is a 1972 graduate of Talladega High.

She received her Bachelor of Science degree from The University of Tennessee, Knoxville, in 1976, where she majored in Broadcasting. The author received her Master of Science degree from The University of Tennessee in August 1982.

She is an active member of the Canaan Baptist Church of Christ, the East Knoxville Jaycettes, and the Knoxville Chapter of the National Association for the Advancement of Colored People (NAACP). She is a technical editor at the Oak Ridge National Laboratory, a member of the Society for Technical Communication, and a prospective member of the Phyllis Wheatley Branch YWCA Advisory Board.

The author is married to Charles Clark and has four children: Andrea Nicholle, Charlette Michelle, Djenara Mariama, and Vincent Jabari.