

REPORT OF THE OTA WRITING TASK FORCE

JUNE, 1987

AUDREY BUYRN, CHAIRMAN

JENIFER ROBISON, CHAIRMAN OF THE SUBCOMMITTEE TO ANALYZE THE WRITING SURVEY

GARY ELLIS, CHAIRMAN OF THE SUBCOMMITTEE TO ANALYZE THE EDITOR SURVEY

CLYDE BEHNEY

LINDA GARCIA

ALISON HESS

TOM KARAS

JEAN MCDONALD

BOB NIBLOCK

EDITH PAGE

REPORT OF THE OTA WRITING TASK FORCE

TABLE OF CONTENTS

| | | PAGE |
|------------|---|------|
| CHAPTER 1 | SUMMARY | 1 |
| | Principal Conclusions and Recommendations | 1 |
| | A Recommendation for a Demonstration | 3 |
| CHAPTER 2 | THE OTA REPORT AND THE OTA SUMMARY | 5 |
| | Four Elements of an OTA Report | 5 |
| | The Structure of an OTA Summary Pamphlet | 6 |
| | Figure 1: Less is More | 11 |
| CHAPTER 3 | ANALYSIS OF THE WRITING SURVEY | 12 |
| CHAPTER 4 | ANALYSIS OF THE EDITOR SURVEY | 17 |
| | Logistics of Editing at OTA | 17 |
| | What Does OTA Expect of an Editor? | 18 |
| | Cost of Editing | 18 |
| | Conclusions | 19 |
| APPENDIX A | The Director's Charge | A-1 |
| APPENDIX B | Nine Well Written OTA Reports | A-2 |
| APPENDIX C | Part 1: The Writing Survey | A-3 |
| | Part 2: Summary of Writing Survey Responses | A-6 |
| APPENDIX D | Part 1: The Editor Survey | A-12 |
| | Part 2: List of Projects Surveyed and Respondents | A-15 |

REPORT OF THE OTA WRITING TASK FORCE

CHAPTER ONE

SUMMARY

In late 1986, the Director of OTA formed the Writing Task Force and asked it to select several "best" written reports from each Division, identify categories of writing excellence in selected OTA documents, and develop criteria for evaluating written documents for superior qualities. (See Appendix A.)

In its first meeting, the Task Force modified the Charge of the Director (with his prior approval), to focus on HOW to improve the writing in OTA documents. In order to answer the HOW question, we first put several questions to ourselves and to our colleagues. What is an OTA report? What should an OTA Summary do? How has OTA used editors? What kinds of writers do we have at OTA? The last two questions were the subjects of surveys addressed to Project Directors and Staff and to Program Managers, respectively. Two Subcommittees of the Task Force analyzed the results of the surveys, and formulated conclusions and recommendations based on those results.

Chapter 2 summarizes several necessary elements of a well written OTA report and Summary. Chapter 3 contains the report of the Subcommittee that analyzed the Writing Survey, and Chapter 4 the report of the Subcommittee that analyzed the Editor Survey. The individual responses to the Surveys have been delivered to the Personnel Office, and will be held in its confidential files.

PRINCIPAL CONCLUSIONS AND RECOMMENDATIONS

Although OTA reports are often described as well written--for government documents--the Task Force finds no reason to be content with this achievement. There are several ways to improve the writing in OTA reports, some of which would, with high certainty and low cost, lead to important, although incremental improvement. One of our recommendations, described below, would be costlier, riskier, and could have a high pay-off, but would probably entail a redefinition (or perhaps just a better definition) of what "balance" and "no recommendations" mean in an OTA report.

The Task Force finds that a good editor can do a lot to improve the quality of an OTA report, even a report written by the best of OTA's writers. However, OTA's experience with editors has been mixed. Evidence from the Editor Survey suggests that bringing on an editor early enough so that he or she develops some familiarity with the assessment itself (e.g., by attending Advisory Panel meetings) is worth the added cost. There is clear evidence that better writers tend to use editors better. Also, good writers will be satisfied only with good editors. Furthermore, if the writing is good to begin with, an editor does not have to spend much time busting up sludge and can focus on the higher contribution of a fresh perspective and style that appeals to the lay

reader. Thus, the Task Force concludes that, to improve writing at OTA, we must improve BOTH the writing of our staff AND our use of editors.

The Task Force finds that good writing requires constant attention, at both individual and institutional levels. Thus, the Task Force recommends that OTA establish a Permanent Writing Committee, which would meet several times a year to develop writing classes with the Personnel Office, review editing software with TIS, coordinate any classes in report presentation with Publishing, help evaluate writing and editorial experiments, and in other ways work to improve writing at OTA. There would be three to six members on the Permanent Writing Committee, appointed from the group of excellent writers at OTA. Members would serve for one to two years.

The Task Force recommends two pilot writing courses at OTA, to run in parallel. The first would concentrate on style (brevity, power, precision and wit on the word, sentence, and page level) and would enroll up to 15 "so-so" and "OK" OTA writers. (See Chapter 3 for definitions.) The second would teach a modified journalistic style to 8 to 15 very good and excellent OTA writers. Both courses would run for 8 to 13 weeks, would meet once a week for two hours in the late afternoon, and would require the students to write, write, write, some of it as homework. The students in turn would get a lot of individual attention from the instructor, and would read and critique each other's work. The Permanent Writing Committee would play a key role in setting up and evaluating the pilot courses, and in developing the courses that follow the pilots.

The Task Force is enthusiastic about the current experiments in layout and presentation. These experiments should be allowed to run their course and their results to jell. Then the Permanent Writing Committee should meet with Publishing to determine the usefulness of offering a course in this area to OTA staff. The Task Force recommends, however, that OTA staff not be expected to become experts in layout, and that if presentation and layout are to become more important at OTA, Publishing be allocated the resources to do the job.

The Task Force finds that we value good writing more than we ever say or show. A good writer's reward often is to fix up someone else's bad writing. We therefore recommend, as a start, that writing be a Comprehensive Evaluation Comment on the Performance Evaluation Form, rather than just a Productivity Factor. We further recommend that serious consideration be given to other forms of reward for excellent writers, such as ensuring that they have time between assignments to write for outside publication, e.g., major articles or perhaps a book based on their OTA work.

The Task Force finds that the cost of a poor writer is very high to an assessment, even when the writer brings a badly needed technical skill to the project team. Furthermore, poor writers can be helped only by extraordinary means, which are beyond the mission or resources of OTA. The Task Force thus recommends that we take even more care than we now do to evaluate job candidates' writing. Writing samples that are wholly the candidate's own work are an absolute must, and it should be made clear to the candidate that the samples will be kept in his/her personnel file, if he/she is hired.

The Task Force finds that, except for copy editors, who do not have to be good writers, good editors are always good writers. In fact, usually an OTA project team does not want an editor, it wants a writer/editor, although it may not recognize this distinction. The difference in cost between a good writer/editor and a not-so-good one is usually much less than one percent of an assessment's budget; hiring the cheaper editor can prove costly, especially when staff mopping up time is counted. The Task Force strongly recommends that daily rate not be the overriding concern in the selection of an editor or writer/editor.

Because of our mixed experience with editors, the Task Force recommends that OTA develop a seminar or method to illustrate to our staff the benefits that can be obtained from professional editing. This might, for example, take the form of a seminar run by several of our editors on Editing: What OTA is Doing Right and What It is Doing Wrong.

The Task Force also recommends that, at regular intervals during an assessment, the Program Manager, Project Director, and Project Staff examine the issue of hiring an editor. The Task Force further recommends that one Program Manager per Division run an experiment with one new assessment in which the PM and PD hire an excellent writer/editor very early in the project, ideally before the first Advisory Panel meeting. The Permanent Writing Committee might help to set the terms of the experiments, select the writer/editors, and evaluate the experiments.

The Task Force finds, on the basis of limited experience, that a Program or Division writer/editor can be valuable. However, it is not clear that Program or Division editors are intrinsically more effective than contract project editors. A program or division contemplating hiring a resident writer/editor should do some homework, proceed slowly, realize that it will still need contract project editors, and not expect to get a good person cheaply.

The Task Force finds that some support staff are willing and qualified to be trained in copy editing. The major experience with support staff copy editing so far seems to be in SET. The Task Force recommends that Program Managers consider training support staff to do copy editing and to be familiar with GPO style.

A RECOMMENDATION FOR A DEMONSTRATION

Finally, the Task Force finds that even well written OTA reports are dull. Have you ever taken an OTA report to the beach? We are sure that some dullness is a necessary byproduct of OTA balance--we suspect that some is unnecessary--but we are not sure how much.

The Task Force recommends a demonstration, to see how interesting and lively an OTA Summary can be and still meet necessary constraints of balance and caution. The demonstration would need: an enthusiastic project team; four to six weeks added to the assessment schedule and \$10,000 to \$15,000 to the assessment budget; an absolutely first class writer from outside OTA added to the team; enough time from OTA's layout expert to integrate appearance and

content; and a review panel consisting both of OTA staff from outside the experimenting Program and Division and several of our most discerning clients. In order for the results of the demonstration to be transferable to other Summary Documents, the assessment should have controversial--but not too controversial--technical and policy content. The demonstration would almost certainly result in some soul searching within OTA about what we mean by balance, how much caution we need employ in stating a strong finding, and when our strongest findings verge on recommendations.

CHAPTER TWO

THE OTA REPORT AND THE OTA SUMMARY

This chapter summarizes several necessary elements of a well written OTA report and Summary. The chapter also describes recent trends and experiments in Summaries.

It is clear that OTA is not ready to--and probably never will be ready to--tightly prescribe the structure of assessment reports and Summaries. But several basic principles are clear.

First, journalistic style of the best kind (perhaps adapted to OTA constraints) is essential to quickly tell the reader what we think he MUST learn from our months or years of work on an assessment. Journalistic style also provides a hiking guide through complex, unfamiliar terrain for the lay reader, and makes reports livelier and more interesting. As the next section explains, this does not mean that the entire report should be written in journalistic style. But the physical and social scientists, engineers, doctors, historians, and lawyers who make up the majority of OTA staff must--with OTA's help--move beyond their technical and academic writing to a style more merciful to their readers.

Second, a Summary should be a fair substitute for the full report. This means it must contain background information, findings and policy options. It must also explain the findings and options well enough to make them credible and to enable the reader to understand them in more than a superficial way. The Task Force finds that a cross-cutting issues section, in addition to a straight summary of the report, can be very effective, and worth the extra pages. The trend to Summaries of 40 to 50 small pages is not, a priori, a problem in the sense that assessment reports of 400 to 500 full-sized pages have been a problem.

FOUR ELEMENTS OF AN OTA REPORT

An OTA report need not be dull, although the highly technical or analytical parts will inevitably be hard going for some readers. A good report is a skillful melding of at least four elements, including:

Newspaper or magazine style prose, providing clear, readable background, connections between other parts of the report (which will probably be in more esoteric prose), and a summary of all the elements of the report. To the Task Force, journalistic style means the kind of writing found in the New York Times Tuesday science section. This type of writing should tie a report together and act as a roadmap for the reader, so that he or she can pursue information beyond the introduction.

Journalistic prose is especially important in the Summary and has major implications for its structure. The inverted pyramid gives the most important information--usually findings and policy options--first. We must assume that

some readers will finish only the first two pages and need a quick gloss of the essentials. Other readers will make it through seven to ten pages, so an expansion of the information in the first two pages, still covering the most important information from the entire report, is a good idea.

The full summary should continue to expand the substantive information and need not be confined to the classic 28 pages, which is an artifact of earlier publishing procedural requirements. The full summary needs to give those readers who will not see the entire report a basic grounding in the subject. Although retaining a good balance between too much detail and what is essential for understanding is difficult, good graphics, including charts and diagrams, are an excellent method of presenting technical details in a journalistic manner.

Technical and scientific information, presenting data, factual documentation, and analysis. This type of writing is appropriate in the chapters of the report dealing with the substance of the research and documenting the findings.

Policy analysis, giving the context for Congressional consideration and including discussion of policy issues, parties at interest, and economic tradeoffs. Because this part of any study is of particular interest to our most important client, the Congress, it is vital that it be clear and intelligible, yet show sophistication and depth of thought.

Philosophical discussion, raising fundamental intellectual, ethical, moral, or governance issues related to the policy questions underlying the request. This component is essential for many OTA reports, but should not provide a vehicle for unbridled musing from the project director.

The final elements need to be presented clearly and concisely, although a journalistic style may not be the most appropriate one. The stylistic goals should be depth and clarity of thought, and simplicity, specificity, conciseness, and elegance of word.

These elements do not determine the structure of an entire report. The subject matter, issues that are analyzed, and information presented often impose some sort of structure of their own.

THE STRUCTURE OF AN OTA SUMMARY PAMPHLET

To aid in its determination of how to improve the writing in OTA documents, the Writing Task Force attempted to define the role and structure of OTA Summaries. The initial questions the Task Force asked itself were:

- 1) whether a summary should be a substitute for the report,
- 2) whether the summary needs proportionally more or less basic introductory material than the report, and
- 3) whether the summary should represent a true executive summary or a

cross-cutting overview of the issues.

To aid in answering these questions, the Task Force collected nine reports and their summaries (one from each program) published within the last 18 months. The reports were selected based on their immediate availability in the Publications Office. A brief description of the structure and contents of each summary, compared to its full report, follows the Conclusions.

Conclusions

The summary is the most widely distributed type of OTA report. Frequently, it is the only form of a report that is read by congressional personnel.

Therefore, a summary should be able to stand alone as a substitute for the full report. In particular, in order to be most useful to our congressional audience, the summary should contain: 1) enough background or introductory information to enable the reader to understand the subject matter and point of the report (usually less than in the full report); 2) the findings, plus enough of the logic to show those findings are supported, and 3) the options, plus sufficient rationale to demonstrate their credibility.

A summary also ought to be an inducement to obtain the full report.

Therefore, its writing ought to be lively, it should make the subject easily understandable and interesting to the lay reader, and it should be nicely packaged (including graphics and photos).

A double structure--a cross-cutting discussion of the issues in addition to a straight summary of the report--may be the best means of accomplishing all of the above. However, the cross-cutting discussion often is very difficult for the Project Staff to produce, having worked and written within the structure of the full report for at least a year. A writer or editor may be helpful in producing the cross-cutting analysis, as well as in ensuring lively and interesting writing.

Most full assessments need a printed summary pamphlet, although alternatives such as the 4-pager (which is about the same written length as a conventional Report Brief, but includes graphics) may be adequate for very short assessments and for those in which the main report essentially is a summary of a larger printed document (e.g., the unclassified and classified versions of Border War On Drugs, Volumes I and II of Energy From Biological Processes). While Technical Memorandums, Staff Papers, etc., do not merit a printed summary pamphlet, some form of summary should be available for those who do not want or need to read the full document. In these cases, the first chapter or section should fulfill the same purposes as a summary pamphlet.

The Structure of Recent Summaries

The nine summaries reviewed ranged in length from 30 to 61 pages. With one exception, the summaries were reprints of the first one or two chapters of the full report. The Office Automation summary was a condensed and slightly re-written version of the first chapter of the report. All of the summaries contained the same amount of, or less, introductory material than the full report.

About half were executive summaries, in the sense that the headings in the summary were essentially the same, and in roughly the same order, as the chapter headings in the report (although they were not as brief as a true executive summary). The ASAT report summarized the technical and policy aspects of the study in a cross-cutting findings section; Surface Mining used the questions in the letter of request for a cross-cutting summary, which was followed by a more technical Executive Summary; Ocean Incineration and Hazardous Materials Transportation reorganized the basic chapter subjects in their summaries.

Recent Experiments in Summaries

The recently-released Border War on Drugs report did not have a summary pamphlet, but expanded the traditional one-pager to a four-pager. Peter Johnson, Project Director, feels that summaries are useless because they just repeat the material in the first chapter of the report. He thinks interested readers would rather have the full report because, even if they only read the first chapter, they can pick up a lot of information by thumbing through the remainder. Johnson believes he was successful in arguing against a summary in this case because the publicly-available report itself is relatively short, and is a long summary of the classified report. In this sense, the four-pager replaced the Report Brief rather than the summary pamphlet.

The Dementia report was the first to experiment with a longer summary (around 80 pages, over 500 in the full report). Bob Cook-Deegan, Project Director, decided to go with a longer summary pamphlet because they had a lot of introductory and background material that people were interested in, but that did not seem worth an additional chapter in the main report. That material makes up about the first half of the summary. The second half summarizes the full report, including policy options, but is organized differently. Cook-Deegan says that, if he had it to do over again, he would not do a summary at all, but use a four-pager with graphics. The press run for the Dementia summary will be the same as for the full report, and the summary will be sold at GPO for about \$3, compared to \$15 for the full report.

Jim Curlin, Project Director for the Seabed Mining study (in press), plans to use the first chapter of the report as the summary, but produce it in the same size and with the same cover and print format as the full report. Curlin thinks the summary might be taken more seriously if it is in the same format as the main report, and anticipates that the cost will be the same or less than the smaller pamphlet.

Summary of Recent OTA Summaries

EMISD:

1. Anti-Satellite Weapons, Countermeasures, and Arms Control: Summary is 31 pages; report is 146. Summary consists of chapter one of the report, including a brief introduction that defines the issues, the principal findings, and a comparison of potential deployment and treaty regimes or scenarios. The findings essentially summarize the main portion of the report, which focuses on the technology and its capabilities, but are organized differently. The last section of the summary is a briefer version of the last chapter of the report. (September 1985)

2. Technology and Structural Unemployment: Reemploying Displaced Adults: Summary is 61 pages; report is 436. Summary consists of the first chapter of the report, including a 4 page overview, or abbreviated summary; the introduction (origin/scope); and the more detailed summary. The headings in the summary follow the chapter titles in the report, with some minor variations and reorganization (e.g., Policy Issues and Options is the last part of the summary, but chapter 2 of the report). (February 1986)

3. Western Surface Mine Permitting and Reclamation: Summary is 54 pages; report is 282. Summary consists of the first two chapters of the main report. The first part of the summary (chapter one of the report) includes an introduction, explaining how the study originated and its scope, and a discussion of the issues and options, which are organized around the questions OTA was asked in the letter of request. The second part (chapter 2 of the report) is a technical summary, organized around the chapters of the report. (June 1986)

SINR:

1. Automation of America's Offices: Summary is 37 pages; report is 348. Summary consists of a summary of chapter one of the report, without the introduction (origin/scope), organization of the report, and methodological discussions. It follows the same basic framework as chapter one, but has been rewritten and reorganized a bit to emphasize the findings and issues, rather than a straight summary. Its basic headings follow essentially the same organization as the chapters of the report. (December 1985)

2. Ocean Incineration: Its Role in Managing Hazardous Waste: Summary is 41 pages; report is 202. Summary consists of chapter one of the report, including a 10 page overview focused on the role of Congress, major public concerns, and the broader environmental policy context; the major findings and policy options; and a discussion of the considerations in developing a regulatory program. The subheadings in the findings section, plus the regulatory program section, roughly follow the chapter headings of the main report, but the summary is organized differently so as to be more cross-cutting. (August 1986)

3. Transportation of Hazardous Materials: Summary is 54 pages; report is 256. Summary consists of chapter one of the report, including a 5 page overview of the issues, findings, and scope of the report; a brief discussion of

Federal regulation; and the findings and policy options. The findings and options are roughly organized around the chapters of the report, but in a different order. (July 1986)

HLSD:

1. Alternatives to Animal Use in Research, Testing, and Education: Summary is 49 pages; report is 417. It consists of chapter one of the report. It includes a brief introduction/origin statement, a definition of terms, and then the summary. About half of the summary portion is a discussion of issues and options. The headings in the summary follow the chapter headings in the report, with some merging of chapters into a single summary section. (February 1986)
2. Technology, Public Policy, and the Changing Structure of American Agriculture: Summary is 39 pages; report is 357. It consists of chapter one of the report. The first part of the summary defines the issues, the second part presents OTA's major findings on those issues, and the third part discusses the implications of those findings and presents policy options. The headings in the summary are the same as the chapters of the report. (March 1986)
3. Technologies for Detecting Heritable Mutations in Human Beings: Summary is 30 pages; report is 136. It consists of chapter one of the report, with most of the introduction (origin, but not scope), the body of the summary, and options. The first 2/3 of the summary is roughly organized around the chapters of the report, but with a lot of merging of the chapters, and rewording of the titles. The last portion is a more cross-cutting look at the use of new technologies in a policy context, plus the options. (September 1986)

FIGURE ONE

LESS IS MORE

F/CB8229-2

A Short Condensed Poem in Praise of
OTA ASSESSMENTS



© Dr. Seuss

It has often been said
there's so much to be read,
you never can cram
all those words in your head.

So the writer who breeds
more words than he needs
is making a chore
for the reader who reads.

That's why my belief is
the briefer the brief is,
the greater the sigh
of the reader's relief is.

And that's why your books
have such power and strength.
You publish with *shorth!*
(Shorth is better than length.)

Dr. Seuss

CHAPTER THREE

ANALYSIS OF THE WRITING SURVEY

OTA's principal products--reports, summaries, and report briefs--are written. OTA's secondary products also are usually written; these include testimony, speeches, journal articles, and other means of publicizing our findings. Therefore, the Writing Task Force surveyed the Program Managers about the value they place on good writing and about their staffs' writing ability (a copy of the survey is included in Appendix C). To illustrate what is meant by good writing, we also asked the Program Managers to name one report that they believe is well written (see Appendix B). The responses to the survey are shown in Appendix C, Part 2.

The Task Force would like to emphasize that, while many of its findings directly affect Project Directors, the options are not meant to increase their workload. For example, if a Program Manager has a choice between upgrading an analyst's writing skills and improving a Project Director's editing, the former would be preferable.

CONCLUSIONS AND SUGGESTED ACTIONS

1. The Program Managers, as well as the Director and the Assistant Directors, place a very high value on Project Directors and other staff having good writing skills. Except for the occasional need to deal with a poor writer, however, the value of staff writing skills usually is evident only during the employment interview. There are few rewards for excellent writing other than a high rating in the Performance Evaluation.¹ Rather, excellent writers often are "rewarded" for their ability by being asked to write more and to clean up the work produced by less skillful writers.

Suggested Actions: First, give more emphasis to writing, both verbally and in terms of salary or other rewards (see 4d, below), throughout the year. Also, writing performance could be elevated to a Comprehensive Evaluation Comment on the Performance Evaluation form, rather than a Productivity Factor. Second, appoint a Permanent Writing Task Force that would meet several times a year to coordinate and evaluate writing classes with the Personnel Office, review writing software with TIS, and coordinate any classes in report presentation with Publishing. The Task Force members would be appointed from the group of excellent writers at OTA (see 4d, below), who would serve 1-2 year appointments on the Committee in rotation.

2. The Program Managers all felt that their writing skills are good, but are getting rusty from lack of practice. Some Program Managers write small pieces for reports. All do some editing of reports, ranging from minor to complete

¹ Other comments made during the course of Writing Survey Subcommittee meetings suggest that the Performance Evaluation Form be reviewed for appropriate emphasis in more areas than writing skills.

line-editing of all final drafts and galleys. Some rewrite when necessary, primarily technical or politically sensitive material. None wanted to take writing classes, most wished for the time or need to write longer pieces, and some wanted more critique of their writing. Without dramatic changes in the Program Managers' workstyles, however, the Task Force believes that the desire to write more on a regular basis is unrealistic.

Suggested Action: None required. Additional critique could be handled on an individual program basis as desired (e.g., staff critique of the pieces Program Managers write for Wye).

3. The Program Managers have very high writing expectations from the Project Directors. All Program Managers expected Project Directors to organize the project and report; write the summary and report brief; edit the drafts, galleys, and page proofs; and take the lead on packaging the report. Most Program Managers expected Project Directors to be responsible for quality control of a report. Several Program Managers expected Project Directors to write at least one chapter of the report in addition to the summary; two Program Managers expected several chapters. About half of the Program Managers also expected Project Directors to do substantial rewriting of either contractor or staff material when the author cannot.

Suggested Action: Probably none required. The expectations vary among programs and even among Project Directors within programs, and probably suit individual abilities and tastes. Possible actions discussed were to give Project Directors more time to accomplish all of this, and to give them more assistance (either in classes or from outside editors) in damage control, or how to use very poorly written material effectively without wasting their own time in rewriting.

4. The quality of writing among permanent program staff generally is adequate to good. The survey asked for number of staff and number of Project Directors in the following skill categories: poor, so-so, darn good, and paragons.² After reviewing the responses, we suspect that a fifth category between so-so and darn good, probably best described as "okay," would have been appropriate. The qualities Program Managers' valued most in excellent writers were clarity, organization, style, the ability to make technical material understandable and interesting to the lay reader, the ability to produce well-balanced reports in OTA style, and the ability to produce high-quality drafts quickly.

4a. Only three staff members were considered "poor" writers, but two of these are Project Directors. They are now required to have editors from the beginning of each project.

² "Poor" writers were characterized in the survey as those who can hardly make themselves understood on paper, even when they try very hard; "so-so" writers as those who can make themselves understood but whose prose is often hard reading even on simple subjects; and "paragons" are those who would be extremely good writers anyplace, not just at OTA. "Darn good" was left undefined.

Suggested Action: The Program Managers agreed that poor writers can be helped only with extraordinary means, which are beyond the mission or resources of OTA. Rather, extra care should be taken during interviewing and hiring to confirm candidates' writing ability (see 6, below). When a poor writer does slip through the cracks, he should be eased out the door as soon as possible. Based on experience in several programs, writing ability should not be sacrificed for a needed technical skill.

4b. Forty to 50 percent of the permanent staff might fall into the "so-so" and "okay" (fifth) categories. A few (maybe 10 percent) are Project Directors. Given the number of staff at OTA with science and engineering backgrounds and little training in writing, this is probably unavoidable in hiring. However, the Task Force considers this a significant problem that needs attention at all management levels.

Suggested Actions: This is the group that could benefit the most from writing classes. The writing problems of this group mentioned most often in the survey, and to which classes should be directed, were style, organization, self-editing, and ability to produce a readable draft quickly. More specifically, these writers tend to use long, very complicated sentences or even partial sentences, and they fail to organize their thoughts before writing. They also have a lot of difficulty editing their own writing. Project Directors and outside editors currently bear the burden of critique and rewriting of this group's material, which is not the best use of either's time. The Program Managers may need to meet to discuss the needs of, and priorities for helping, this group.

Classes for this group should be tailored to individual needs. One means of ensuring this would be to give the instructor a sample of each class member's writing before the class begins. The classes should be small (10-12 people) to allow for individual instruction, even if two or more classes have to run in parallel. The people in the classes should be about equal in writing ability. The classes should last for 8 to 12 weeks, meeting for 2 hours per week. They should be scheduled so as not to interfere with normal work, meetings, etc. (e.g., 4:00-6:00 pm). Journalism classes that require students to write on-the-spot from a given set of facts might be especially useful for this group.

Program Managers should meet with their so-so and okay writers to decide which class(es) would be most beneficial in improving those staff members' writing skills. The writer and Program Manager also should agree on a class schedule that matches the writer's work schedule (i.e., not when the writer is in a crunch). Once an improvement plan has been worked out, OTA expects the staff member to go through with it.

The Personnel Office and the Permanent Writing Committee should work together to determine what classes outside OTA are available (e.g., at local colleges and universities), and what instructors are available to give classes at OTA. However, it should be kept in mind that classes outside OTA rarely could be tailored to individual needs, nor would we be able to control the size or homogeneity of the class. In addition, Personnel and the Writing Task Force should determine whether a writing diagnosis center is available at any of the

local institutions to aid staff in identifying their strengths and weaknesses. Candidate classes' syllabi should be scrutinized, and instructors interviewed, by Personnel and the Writing Committee before any decisions are made.

4c. Another 40 percent of the staff are good to darn good writers. Around 30-40 percent of these are Project Directors.

Suggested Actions: This group might benefit from advanced versions of the classes discussed above (e.g., an advanced style class would demonstrate how to stay within OTA style and still not be boring). In addition, they might benefit from classes on how to translate OTA material for other genre (e.g., a journalism class, an OTA class on how to write for technical and trade journals, popular magazines, even fiction), and classes on how to improve the visual presentation of OTA material (e.g., better graphics; see 5, below). They also would benefit from more regular inhouse critique of their writing.

4d. There are one or two paragons per program. Almost all of these are Project Directors. They tend to seek informal critique of their writing from their peers.

Suggested Actions: Classes probably would be a waste of time for this group, with the possible exception of a class on how to translate OTA material for other genre. However, special attention should be given to devising means of rewarding this group for their writing skills, and to achieve agency-wide recognition of those skills. One way of getting more agency-wide benefit would be to have the paragons serve, in rotation, as the core of the Permanent Writing Committee. A possible reward is to ensure that they have time between studies to publish outside OTA. This could be the current informal 2- to 3-month decompression period that usually is used to get up to speed on the next study. A longer 6- to 12-month sabbatical might be given for writing book-length pieces based on OTA work. The Program Manager, Publishing Office, and others could assist in lining up a publisher, who might, if the topic and the writer were right, offer an advance, which would defray part of the cost of the leave.

An alternative, or addition, to classes for all groups would be to hire a full-time writing specialist for 2-6 months to tutor the poor, so-so, and okay writers, and critique the writing of anyone who requests it.

5. While Project Directors and other staff could benefit in a class on visual presentation of OTA material, and should be able to recognize good layout, they should not become layout experts.

Suggested Action: The ongoing experiments in presentation and layout (e.g., 4-pagers) should be allowed to run their course and their results to jell. Then the Writing Committee should meet with Publishing to determine the potential usefulness of offering a class in this area, and its format.

6. All Program Managers place a high priority on good writing skills when hiring someone. The methods used to evaluate candidates' writing skills include reviewing writing samples, asking references about writing ability, and listening to their oral communication skills during the interview as a

proxy for writing skills. However, these are imperfect because writing samples often have been edited by others, and references are reluctant to say anything negative. Several Program Managers mentioned the possibility of having a candidate write something especially for or during the interview.

Suggested Action: The latter suggestion might be considered insulting in that it implies we do not believe job candidates' assertions that the sample is their own writing, and we do not trust references. In order to deter outright lying about writing samples (which has occurred), it should be made clear to candidates that writing samples will be kept in their personnel file. Another way to improve our ability to gauge candidates' writing ability is to ask candidates and their references more questions about how much writing is involved in their current work, what kind of writing, and how much feedback they get on it. The Program Managers could get together and develop informal guidelines on how best to ensure that new employees are good writers.

7. Computer software will not, by itself, solve any writing problems, but it can help. It is valuable (but not perfect) for catching typos and misspellings. Software currently available within OTA also can be useful for flagging long sentences, complicated sentences, passive verbs, and jargon-laden writing.

Suggested Action: The Writing Committee should work with TIS to review editing software and make recommendations on its use in OTA.

CHAPTER FOUR

ANALYSIS OF THE EDITOR SURVEY

Acting on the premise that published text is the sum of original writing plus editing efforts, the OTA Writing Task Force in April 1987 undertook a survey of editing at OTA. The Task Force's Subcommittee on Editing analyzed the results of the survey on the use of editors on 37 recent OTA assessments. Appendix D contains the survey and a roster of the assessment titles, survey respondents, and editors.

LOGISTICS OF EDITING AT OTA

Ten of 37 assessments (27 percent) did not involve an editor. The common reason given for not hiring an editor was that the project director preferred, or was able, to do the editing. Of the respondents that did not hire an editor, about half stated that they regretted not doing so.

The use of editors among the 73 percent of assessments that employed them varied widely. Editing costs per project ranged from about \$2,000 to \$20,000. Daily rates for editors ranged from \$130 to \$250, with one intern at \$80.³

OTA's experience with editors has been mixed. Of those respondents that hired an editor, about half were unhappy with the editor's performance. None expressed regret at having sought an editor--just regret about the specific editor hired. The agency exhibits a diversity of procedures for selecting editors; the most obvious recipe for success is to select an editor with whom one has previously worked successfully at OTA. Most respondents noted that an editor's interpersonal skills were of equal or greater value than his or her editorial skills.

There is wide variation in the point at which editors are engaged. Two programs (F&RR, BAP) appear to hire editors substantially earlier in a project's life than do other programs. As a consequence, F&RR and BAP spend more money on editing than do other programs. These programs noted that the editor may come on board early enough to be present at one or more panel meetings and to edit the draft manuscript delivered to TAB. These programs are among those expressing the greatest subjective happiness with their editors.

One program (ISC) prefers not to use editors and has done so on only three occasions. This program faces the problem of obtaining editors with security clearances. Of even greater importance, however, is skepticism that the margin of improvement gained by hiring an editor is worthwhile in every case.

³ OTA staffer Kerry Kemp edited three of the assessments included in this survey. Total editing costs and daily rate were not given for Kemp's work, but are taken to be nonzero and falling within the ranges cited here.

One program (Health) until recently had a resident editor and expresses a high degree of satisfaction with this arrangement. This editor is now the "Division Editor" for Division B and spends perhaps 25 to 35 percent of her time as Health Program resource editor, helping the program with organizing reports, with contractors, and with publishing. The majority of her time is as project editor on a series of reports within Division B.

WHAT DOES OTA EXPECT OF AN EDITOR?

The survey responses indicate that editor is, in fact, a catchword for a person who performs a conglomeration of writing and editing tasks for OTA. These include:

- o composing a draft summary of the report;
- o rewriting and revising lines of text;
- o reconciling phrases among chapters;
- o editing copy for GPO and OTA style
- o checking references, tables, figures, and illustrations;
- o checking table of contents;
- o composing a glossary;
- o composing an index;
- o serving as liaison with the Publishing Officer;
- o reading first galleys;
- o reading second galleys; and
- o reading page proofs.

Dissatisfaction with specific editors may evolve from poor definition of the editor's responsibilities, which leads to both overexpectations (i.e., the editor does too little) and underexpectations (i.e., the editor does too much) on the part of OTA staff. In general, OTA staff expect editors to be excellent editors *and* writers. Better definition of an editor's responsibilities and prior scrutiny of his or her full range of abilities can be expected to enhance the satisfaction of OTA staff with editors. The differences between a versatile writer/editor and a copy editor can be marked, and OTA staff should be careful to make this distinction.

COST OF EDITING

The project budgets for the 37 assessments surveyed are estimated to range from \$100,000 to \$750,000. Editing costs are estimated to be 2 to 3 percent of the project budgets. Considering the global effect that an editor may have on the content and form of a publication, this seems to be a small amount. It is generally much less, for example, than the amounts paid to GPO to print the publication, which range from \$7,500 to \$30,000 (4 to 7 percent of project budget).

With regard to daily rates paid to editors, several respondents expressed the sentiment "you get what you pay for." No respondent deemed a successful editor's daily rate to be an overcharge. Several respondents called attention to the additional cost in OTA staff time (which can be substantial) to mop up after a poor editor. Several respondents expressed regret that they had

attempted to economize in hiring an editor. In this vein, it is worthwhile considering the economy of hiring an editor solely because of a lower daily rate:

Assume 25 days of invoiceable editing work and a project budget of \$275,000. At a daily rate of \$160, Editor A will receive a total of \$4,000. At a daily rate of \$190, Editor B will receive a total of \$4,750. The theoretical savings from contracting with Editor A rather than Editor B will be \$750, or 0.27 percent of the project budget.

Compared to a candidate's editorial, writing, interpersonal, and other relevant skills, daily rate stands as a relatively unimportant factor to consider when choosing an editor. This point is not intuitively obvious. Project staff would be well-advised to make a sample calculation as above, in order to avoid pursuing a false economy.

CONCLUSIONS

Virtually all OTA staff recognize that editing is an integral part of a published report. Most OTA staff want help from an editor. Yet a fair amount of dissatisfaction exists with recent editing practices (both among those who did and did not employ editors).

An OTA-wide effort should be made to illustrate to all program managers and project directors the benefits that can be obtained from professional editing. Feedback from editors ("What OTA is Doing Wrong With Respect to Editing") is one way to go about this. Commissioned presentations by one or more of OTA's favorite editors, editors with whom there have been problems, or an outside consultant would be constructive.

Even the best OTA writers can benefit from an editor, just as the best professional writers in journalism and literature benefit from editors. Editors are not retrained merely to make bad writing good. Rather, they can provide a fresh eye, distance from the subject, and an unbiased viewpoint. At OTA, they can be especially helpful in recognizing and eliminating jargon.

Program managers should raise the consideration of hiring an editor as a regular component of every assessment. Program managers can raise the issue of hiring an editor with project directors at regular intervals from start to finish of a project. Such a regular examination of the need for an editor will likely increase incrementally the editing of OTA publications. At the very least, it will lead to and promote cognizance of three different models for editing: hiring early, hiring late, or designating a staff analyst as the project editor.

Some apparently reliable predictors of an editor's success can be used in choosing an editor. Survey respondents rate an editor's familiarity with the kind of work OTA does as important. Specifically, the editor's satisfactory completion of an earlier effort for OTA and a good word-of-mouth recommendation from OTA staff are important, although not overriding, considerations. An

editor's daily rate is a relatively minor consideration.

The hiring of an editor/writer by a program or division appears, on the basis of limited experience, to be both workable and successful. For a program or division willing to commit money, office space, and a temporary or permanent staff position, a staff editor/writer will likely enhance the quality of published text and save management time (at all levels) now being consumed by editing chores. (Learning how to better use contract editors/writers might accomplish the same.) No editor, however, can perform the substantive quality control now exercised by project and program management. Nor can a program or division editor do all needed editing work. The program or division will still have to hire outside editors, although less often than if it did not have a resident editor.

A program or division interested in hiring a resident editor/writer should proceed in a way that is reversible at any point. The program should think through how it would use a resident editor, seek advice from the two programs that have had program editors (Health and O&E), and experiment with contract editors. It is particularly important for a program contemplating this step to gain experience bringing on an editor early in an assessment. To be hired, a staff editor--like a successful contract editor--should have a long record of successes with OTA manuscripts and have demonstrated that he or she works well with the OTA staff. Good editors/writers will not come cheaply, just as good analysts do not come cheaply.

Support staff can be trained in one facet of editing--copy editing--at relatively little expense and with great benefit. (This assumes that some support staff are both willing and qualified for this undertaking.) An expansion of support staff training either in-house or out-of-house is a relatively inexpensive way of enhancing the copy editing capability of OTA staff. Training in GPO/OTA style would be especially useful. Enhancing support staff capability is likely to have the additional salutary benefit of improving support staff morale and increasing upward mobility.



STAFF MEMO

APPENDIX A

THE CHARGE OF THE DIRECTOR

December 30, 1986

To: Distribution

From: John H. Gibbons *JHG*

Subject: Training, Development, and Recognition of Writing Skills at OTA

We've wrestled collectively with this subject on several previous occasions, most notably at the 1986 October First Thursday and at Wye-86 in November. I believe that it's now time to move ahead, and therefore I am establishing a Task Force, consisting of a Program Manager and two senior staffers from each division (A,B,C). The Task Force has the following charges:

- (a) Select several "best" written reports from each of the divisions.
- (b) Identify several categories of "writing excellence" contained in selected OTA documents, (e.g., clarity of writing; organization and development of written materials), and develop criteria for evaluating written documents for superior qualities.
- (c) Prepare a summary report on the conclusions of the evaluation for distribution to OTA staff.

I hope that this process can be completed by April 1, 1987.

I also ask each Program Manager, with the participation of the appropriate Assistant Director, to review the writing development needs (if any) of each of their analytical staff members, as a means of assessing in detail the needs and opportunities for writing improvement, as a continuing part of OTA staff development. The Personnel Office will be available to assist in this survey and coordinate the selection of appropriate responses tailored to the needs of the individuals who elect to participate. I hope that we will be able to organize our first coaching or training sessions by the Spring as a result of this process.

* Div. A Audrey Buyrn (Chair), Jenifer Robison, Tom Karas
 " B Clyde Behney, Gary Ellis, Alison Hess
 " C Bob Niblock, Linda Garcia, Edith Page

The Task Force may solicit input from any other OTA staff they choose.

Distribution

| | | |
|---------------------|------------------------|--------------|
| Assistant Directors | Operations Manager | Gary Ellis |
| Program Managers | Administrative Officer | Alison Hess |
| Senior Associates | Executive Assistant | Linda Garcia |
| Director, CPA | Jenifer Robison | Edith Page |
| | Tom Karas | |

APPENDIX B

NINE WELL WRITTEN OTA REPORTS

The Task Force decided, with the Director's approval, not to attempt to select the "best" written OTA reports. However, for illustration, we present one published document from each Program that is well written. We are sure there are others.

New Structural Materials Technologies (E&M)

The Effects of Nuclear War (ISC)

Plant Closing: Advance Notice and Rapid Response (ITE)

Human Gene Therapy (Bioapps)

Technologies for Sustaining Tropical Forest Resources (F&RR)

The Summary Document for Status of Biomedical Research
and Related Technology for Tropical Diseases (Health)

Intellectual Property Rights (CIT)

Border War on Drugs (O&E)

Transportation of Hazardous Materials: State and Local Activities (SET)

APPENDIX C PART 1

THE WRITING SURVEY

4/7/87

SURVEY: HOW CAN WE IMPROVE THE WRITING OF OTA STAFF?

The purpose of this survey is to figure out how OTA could help its staff write better in order to produce better written OTA reports. The Writing Task Force believes that most--probably all--of us could write better, that learning how is hard work, and that practice is essential to learn and to maintain skill. The Task Force also believes that no one course, seminar, or coaching session is right for everyone at OTA who wants to improve; thus we are trying to find out what kinds of writing problems people have, and how severe they are. We have no interest in assigning grades or categorizing people in this survey, just in finding out how to help people improve.

There are two basic assumptions in this questionnaire.

(1) There is NO ONE at OTA whose writing is so good that it cannot be improved in some way. (This doesn't necessarily mean that OTA will set up a course or seminar to improve the writing of the best writers among us.)

(2) There is no one on the analytical staff at OTA whose writing is so bad, or whose job requires so little writing, that he and OTA could not benefit from improving it. (This does not necessarily mean that OTA will set up a course to improve the writing of poor writers who do little or no writing on the job.)

The Task Force is temporarily separating the question of HOW to improve writing from HOW MUCH effort we should make IN WHAT DIRECTIONS. Thus, the Program Managers, who will be answering this survey, should not abort a good idea on HOW because they think it might be too hard or expensive to implement.

PROCEDURE

Each Program Representative on the Task Force will interview her or his Program Manager. Each Program Manager on the Task Force will interview her or himself. The survey will be done during the interview.

Program Representatives should take the survey to the Program Managers, explain its purpose, leave the survey with the PM so the PM can think about it, and schedule a full hour about a week later for the interview.

We want essay answers, not yes, no, good, bad, 3.14159, it depends.

THE SURVEY

1. What do you, the PM, think of your own writing? What are your strengths, your defects? What would help you improve your own writing?

2. How much (a) writing, (b) editing, and (c) rewriting of your program's reports do you, the PM, do?

3. Considering your responses to (1) and (2), do you think that you, the PM, want another person in the Program to help you answer this survey? If so, you may.

IN ANSWERING THE FOLLOWING QUESTIONS, PLEASE DO NOT GIVE NAMES; IF YOU WANT TO DISCUSS PEOPLE BY NAME TO CLARIFY YOUR THOUGHTS, THE INTERVIEWER WILL CENSOR THE NAMES OUT OF HIS OR HER NOTES.

4. Do you have any extremely good writers in your Program? Writers so good that they would be good anyplace, not just at OTA? Are any project directors (PD's)? What criteria did you use in answering this question?

4a. With how many of these paragons are you blessed? (If you think "paragon" or "blessed" is overstatement, see Question 7.)

4b. How might we improve the writing of these, the best? What kind of course or seminar might accomplish this? (Most PM's should put question 4b to the people concerned; the best are often the best judges of what will make them better.)

5. Do you have any poor writers in your program? That is, writers who can hardly make themselves understood on paper even when they try very hard, because they have several or all of the following problems:

- use poor grammar
- frequently misuse words or choose words badly
- have difficulty writing a clear, precise sentence
- hardly ever write a simple sentence
- have difficulty organizing at the paragraph or sub-paragraph level
- organize badly at the page and section level
- cannot edit their own writing
- other (please describe)

5a. How many such people do you have? Are any PD's? How many write so little in their job that their writing isn't a problem for OTA?

5b. Do you think their writing can be improved? If no, why not? Are there good ways to improve their written products other than training them?

5c. What is the first step to improving the writing of these people? Given the specific people in your program with these problems, what should we (a) seek and (b) avoid as we design courses? (Note that for some poor writers, poor writing may be a symptom of something else, and a writing course may be the wrong first step.)

6. How many so-so writers do you have in your program? That is, writers who can make themselves understood on paper (particularly if they work hard at it) but whose prose is often hard reading even on simple subjects? How many are

PD's?

6a. What kinds of courses should we design for these people as a first step in improving their writing? For example, we might develop five types of courses:

- 1) Style, which would concentrate on brevity, power, precision and wit on the word, sentence and page level.
- 2) Organization on the paragraph, page, and short section (1000 words or less) level
- 3) Organization on the long section and chapter level
- 4) Getting a first draft, however awful, on disc, and editing it quickly to something that someone else can read
- 5) Self-editing to nurture a first readable draft to a thing of beauty

What are your suggestions on how these courses might be conducted?

Perhaps none of these five seems best for one or more of your program's staff. All suggestions are welcome.

7. How many writers do you have who are darn good (but not paragons). How many are PD's? What would elevate these writers to paragonhood? Consider: (a) advanced versions of the courses suggested under 6; (b) a less advanced version of what we do for the best; (c) mixing the good and the best in a seminar (the good learn from the best and the best often learn from teaching); (d) how to take an OTA report and put in a journalistic style; (e) X, something I haven't suggested.

8. What do you expect in the way of writing and editing form a PD? Do you expect PD's to:

- do a lot of writing of the report
- do major rewriting of the report
- figure out how to package the report
- other (please explain)

Consider a special course for PD's and PM's in how to present a report, from writing effective prose to organizing chapters, reports and summaries to making a strong visual impact with typographical layout, charts, illustrations, and other features. Would this be worthwhile? If yes, why? If no, why not?

9. What problems might computer software AMELIORATE? Which of our writing problems can current or foreseeable computer software SOLVE?

10. Does it matter to you if a job candidate is a good writer? If no, why not? If yes, how do you find out if a job candidate is a good writer? How successful is your method?

APPENDIX C PART 2

SUMMARY OF WRITING SURVEY RESPONSE

| QUESTION | HEALTH | F&RR | CIT | OCEANS & ENVIRONMENT | ITE |
|---|--|--|--|---|--|
| 1. How does PM judge own writing ability; what would improve it? | Great but wordy Well-organized Need more practice | Clear on 2d draft, but bland Need more practice | Good, only way to improve is practice; quality can't be measured on linear scale, can't be improved by tinkering | Okay, but need practice and critique for style/zip | Good, but difficult to write unless I know what I want to say |
| 2. How much a) writing, b) editing, c) rewriting of reports does PM do? | a) very little b) a fair amount c) some minor Write proposals | a) small pieces b) a lot c) sometimes | Very little | a) very little b) a lot c) a lot, but trying to quit | a) very little b) some for all, a lot for one c) a bit |
| 4. How many excellent writers/PDs in program;* criteria for judging paragons? | 6 in Division; 3 PDs, 1 Study Dir. Clarity, organiz, style translate technical to understandable, need little editing, speed | 6 in Division; 3 PDs, 1 Study Dir. Clear, accurate, readable, well-balanced analyses | 4 in Division, some of which are PDs | 4 in Division, some of which are PDs Clarity, style, speed of output | 7 in Division, 4 PDs Simple, clear, precise, good self-editing |
| 4b. How might writing of best writers be improved? | Not worth time, but reward or recognize ability | Peer review within program, class in flexibility in style | PD should have them practice writing poetry or fiction | Regular critique by other paragons | Critique of a long piece by an extremely good writer; either editor or OTA paragons in seminar |
| 5. How many poor writers/PDs;* do they need to write for job? | 3 in Division, 2 PDs, third leaving PDs now required to have editor from onset of project | 3 in Division, 2 PDs, third leaving PDs now required to have editor from onset of project | At least 1 in Division, Consultant, only gathers data | At least 1 in Division, Consultant, only gathers data | 1 in Division, doesn't write, is a problem |

* The responses to questions 4, 5, 6, and 7 were totalled by Division to preserve confidentiality.

| QUESTION | HEALTH | F&RR | CIT | OCEANS & ENVIRONMENT | ITE |
|--|--|---|--|---|--|
| 5b. Can their writing be improved? | Not worth the effort unless other truly exceptional gifts | Course in self-editing might help | None | Can't be improved | Can't be helped; get technical info and ease out |
| 6. How many so-so writers/PDs?* | 8 in Division; 1 PD, 3 Study Dirs. | 8 in Division; 1 PD, 3 Study Dirs. | 9-10 in Division; 1 PD | 9-10 in Division; 1 PD | 6-9 in Division; 1 PD |
| 6a. What kinds of courses would help so-so writers? | Individual tutoring wld be most valuable, also courses on organization, style but would have to be repeated | Courses in self-editing, style; need to invest- gate good teachers, give them WTF results | Practice in workshop setting | | Style course most bene- ficial; any course needs a) excellent writer for teacher; b) diagnose class needs before course design; c) small, homogeneous; d) a lot of writing and critique; e) duration of 8-13 wks, 2 hours/wk |
| 7. How many darn good writers/PDs?* | 17 in Division; most are PDs or Study Dirs. | 17 in Division; most are PDs or Study Dirs. | 23-24 in Division; some are PDs | 23-24 in Division; some are PDs | 19-24 in Division; at least 5 PDs |
| 7a. What would make them paragons? | Allow more drafts (more time), journalistic style course | Same as for paragons | Give lots of writing experience | Continually emphasize value of good writing; set up Permanent WTF to deal with training, guest speakers, software | More time, course in journalistic style, also 8-13 wks, but tailored to OTA need for balance |
| 8. How much report writing, major rewriting, packaging, other, do you expect PD to do? | Major writing (not bulk) Major rewriting All or most of summary Little packaging Organization Report brief Help with press release | Major rewriting/editing of staff and contractor work; all quality control; packaging is team effort | Expects them to be paragons, do a lot of writing | One chapter Organization, integra- tion of analysis, qual- ity control, major editing | Write several chapters, plus organization, quality control, some packaging; little rewriting |

* The responses to questions 4, 5, 6, and 7 were totalled by Division to preserve confidentiality.

| QUESTION | HEALTH | F&RR | CIT | OCEANS & ENVIRONMENT | ITE |
|--|--|---|---|--|---|
| 8a. Would course in report presentation (verbal and visual) for PDs/PMs be useful? | Course might be useful for visual aspects, but don't expect PD to be layout expert | Course might be useful, but not until ongoing changes and experimentation are synthesized | | Course not necessary with creative PD and PM working together | Yes, emphasize strong visual impact, non-academic style, 8-13 wks |
| 9. What problems might computer software solve/ameliorate? | Catch typos | Improve spelling; WTF should investigate writing software | | Good reminder of some stylistic errors; need to find better software | Spelling, style check |
| 10. Does it matter if a job candidate is a good writer; how do you find out? | Very much Writing samples | Try to find good writers, but technical competence comes first; References, publications; Asks WTF advice | Depends on job description; writing samples | Very much; listen to them talk, check writing samples and references, and pray a lot | Hell yes; read samples, probe in interview, check references |

| QUESTION | BIO-APPS | SET | ISC | ENERGY & MATERIALS |
|---|--|---|--|---|
| 1. How does PM judge own writing ability; what would improve it? | Good, but could be faster; reread Strunk & White frequently | Strong, but sloppy through disuse; occasional critique would help | At best, excellent; need practice in writing longer pieces | Okay, but too complicated and academic; reread Strunk & White before writing |
| 2. How much a) writing, b) editing, c) rewriting of reports does PM do? | a) very little b) complete line editing | a) very little b) moderate c) almost none | a) very little b) every page at least twice c) not much | a) occasional small pieces b) and c) minor because others in program are better at it |
| 4. How many excellent writers/PDs in program;* criteria for judging paragons? | 6 in Division; 3 PDs, 1 Study Dir. Clarity, style, diction, organization, self-editing, speed | At least 5 in Division, some of which are PDs | 7 in Division, 4 PDs Clear, lucid, draw reader on, makes reading difficult subject attractive, conveys analyst's excitement | 7 in Division, 4 PDs Clear, logical flow on first draft; little editing needed, exceptional ability to edit other projects' drafts |
| 4b. How might writing of best writers be improved? | | Good critical feedback on individual basis; more time to write | More time, more critique; journalistic style class | Journalistic style; make effective use of very poorly written material |
| 5. How many poor writers/PDs;* do they need to write for job? | 3 in Division, 2 PDs, third leaving PDs now required to have editor from onset of project | At least 1 in Division, Consultant, only gathers data | 1 in Division, doesn't write, is a problem | 1 in Division, doesn't write, is a problem |
| 5b. Can their writing be improved? | | Intro writing courses that stress style and organization | Not improvable | |

* The responses to questions 4, 5, 6, and 7 were totalled by Division to preserve confidentiality.

| QUESTION | BIO-APPS | SET | ISC | ENERGY & MATERIALS |
|--|--|---|---|--|
| 6. How many so-so writers/PDs?* | 8 in Division; 1 PD, 3 Study Dirs. | 9-10 in Division; 1 PD | 6-9 in Division; 1 PD | 6-9 in Division; 1 PD |
| 6a. What kinds of courses would help so-so writers? | Teach OTA style, peer critique; hire writing instructor for voluntary continuous review and critique; distribute "how to" books to all staff | Courses on style, organization tailored to individual needs | Peer critique, courses on organization, style | More time; courses in organization, style, self-editing; courses should be small, uniform ability; also greater PM emphasis on value of good writing and appropriate rewards; new staff could benefit from short course in OTA style |
| 7. How many darn good writers/PDs?* | 17 in Division; most are PDs or Study Dirs. | 23-24 in Division; some are PDs | 19-24 in Division; at least 5 PDs | 19-24 in Division; at least 5 PDs |
| 7a. What would make them paragons? | | Direct, tailored critique of writing, models to emulate | Courses in style, clarity/brevity, self-editing; journalistic style | Class in journalistic style; regular practice and critique within program |
| 8. How much report writing, major rewriting, packaging, other, do you expect PD to do? | A lot of writing, incl. summary; little rewriting; packaging is team effort | All of the above | Write summary, plus chapters on smaller projects; little rewriting; major packaging; organization and level of detail | Write summary and report brief, plus one chapter; major editing, rewriting if necessary; organization and packaging |

* The responses to questions 4, 5, 6, and 7 were totalled by Division to preserve confidentiality.

| QUESTION | BIO-APPS | SET | ISC | ENERGY & MATERIALS |
|--|---|--|---|--|
| 8a. Would course in report presentation (verbal and visual) for PDs/PMs be useful? | Good idea | WTF efforts, Hammond's report, etc. will accomplish without a course | Course on general editing with emphasis on layout and presentation might be worthwhile; avoid cookbook approach | Some of recent changes were ineffective, course might reinforce; PDs should keep current on new ideas and work closely and early with Publishing |
| 9. What problems might computer software solve/ameliorate? | Can be powerful tool, at least good style check | Will do nothing to improve writing | None, none | Good with spelling, diction, style checks |
| 10. Does it matter if a job candidate is a good writer; how do you find out? | Absolutely fundamental; writing sample, references imperfect; considering sample written during interview | Very important, writing sample works well | Yes, writing samples are pretty successful | Very important; writing samples imperfect, considering asking candidates to write piece for interview, similar to Fellows' personal statement |

APPENDIX D PART 1

THE EDITOR SURVEY

4/7/87

SURVEY: HOW HAS OTA USED EDITORS?

The purpose of this survey is to learn how OTA has been using editors, in order to figure out how we might use editors more effectively. The ultimate purpose is to produce better written OTA reports.

At the first meeting of the Writing Task Force, a member of the TF quoted a newspaper editor: "There is no such thing as good writing, only good editing." We decided that, for OTA, there was such a thing as good writing, but that good editing was perhaps just as important. We also decided that the two were related: good writers know how to select good editors and use them effectively; good editors can be a revelation to analysts who have focused on analysis more than writing.

Filling out surveys can be a pain. But at least in this one you'll know that every answer will be read by a person, not a computer, and that we are as interested in the anomalies as the average. We will do our best to see that your answers eventually benefit you and your colleagues.

PROCEDURE

This survey covers approximately 40 OTA documents published in the past few years. The survey is being sent to Program Managers, with enough information so that the PM can divide the task among Project Directors and surviving members of project teams, if the Project Director has left OTA. The PM should review his or her Program's submission and resolve or highlight any disagreements about the answers.

Each Program Representative on the Task Force will deliver the survey in person to his or her PM, will explain its purpose and answer questions. The Program Representative will be delighted to answer questions as the PM, PD, and survivors struggle with the survey.

THE SURVEY

- 1 Did you hire an editor on the project? If yes, skip to #3.
2. If you didn't hire an editor, why not? Was it a mistake not to hire an editor or writer? If so, why? If you didn't hire an editor, who acted as editor, and how well did this work out? (Stop here. No further questions apply.)

3. If yes, at what point in the project did you hire an editor? (Please try to reconstruct as much as you can of the thinking and circumstances which led you to hire an editor. For example, why did you hire an editor then, rather than earlier or later; who decided to hire the editor; what problems were you facing that called for an editor?)
4. How did you search for an editor, and how did you select her or him?
5. What daily rate did you pay, and how much did you pay for the entire job?
6. Did you reject some candidates who you knew were good (or had excellent reason to think would be good) because they were too expensive? If so, how expensive was too expensive? Do you think you might have gotten a markedly better job than you did if you had not tried to economize? Please explain your answer.
7. What did you ask the editor to do? That is, did you expect the editor to
 - (a) put everything in proper form, check to see that content in tables matches text (i.e. copy editing)
 - (b) rearrange words in sentences, supply better words, get rid of excess (i.e. line editing)
 - (c) rearrange large blocks of text, write new introductions and transitions, make major excisions, suggest additions (i.e. substantive editing/rewriting)
 - (d) other (please describe)
8. Have you found anyone who can do two or all three types of editing well? How important was it that the editor be a good writer? Did you hire an editor when you should have hired a damn good writer? If yes, why do you think so? If no, why not (e.g. perhaps the PD and the staff were excellent writers?)
9. How good a job did the editor do? What did you like and/or dislike about the editor's job? If you were really pleased, what factors led to this happy conclusion?
10. Did the PM, PD, or anyone on the project team have to undo, redo, edit or rewrite what the editor did? If so, why (e.g., was this part of the plan of using the editor? or was the material so highly technical or specialized that one couldn't expect an editor to get it all right? or the original writing so dreadful that it defied any one person to fix it? or the editor not very good? or the editor good, but not as good as the PM or PD? or what?)
11. (a) How and (b) how well did the editor work with the project staff? If there was friction between the editor and project staff, what were the reasons?

12. Did the editor come on early enough to become, in some sense at least, part of the project team and gain some familiarity with the substance and process of the assessment? Was this a plus or not? Why or why not? What were the logistical problems in arranging this, and how did you solve them?

13. Are there any editors you would want permanently available? How would you use their services? What might their position in the organizational structure be?

Appendix D (Part 2): List of Projects Surveyed and Respondents

DIVISION A: ENERGY, MATERIALS, AND INTERNATIONAL SECURITY

Energy and Materials

| <u>Assessment</u> | <u>Survey respondent</u> | <u>Editor</u> |
|---------------------------------------|---------------------------------|----------------------|
| New Electric Power Technologies | P. Blair | D. Sheridan |
| Western Surface Mining | J. Robison | [none] |
| U.S. Natural Gas Availability | S. Plotkin | M. White |
| Prehistoric and Historic Preservation | R. Williamson | unidentified |
| Section 3, Federal Coal Leasing | K. Larsen | [none] |

Industry, Technology, and Employment

| | | |
|---------------------------------------|-----------------------|-----------------------|
| Wood Use: U.S. Competitiveness | W. Fletcher | L. Powers |
| Superfund | A. Buyrn | C. Elfring/I. Gordon |
| Serious Reduction in Hazardous Wastes | A. Buyrn/K. Oldenburg | E. Horwitz |
| Structural Unemployment | A. Buyrn/K. Gillman | D. Sheridan/A. Covalt |
| Trade in Services | A. Buyrn | [none] |
| Plant Closing | A. Buyrn | [none] |

International Security and Commerce

| | | |
|---------------------------------------|----------------------|--------------|
| Middle East Technology Transfer | P. Sharfman | unidentified |
| NATO Follow-on Forces Attack Concept | P. Sharfman | unidentified |
| Technology Transfer to China | P. Sharfman/A. Crane | unidentified |
| New Ballistic Missile Defense Technol | T. Karas | [none] |
| Civilian Space Activities | R. Williamson | [none] |

DIVISION B: HEALTH AND LIFE SCIENCES

Biological Applications

| <u>Assessment</u> | <u>Survey respondent</u> | <u>Editor</u> |
|--------------------------------|--------------------------|--------------------|
| Losing A Million Minds | R. Cook-Deegan | L. Starke/R. Danca |
| Alternatives to Animal Use | G. Ellis | L. Starke |
| Life-Sustaining Technologies | C. Maklan/K. Maslow | K. Kemp/C. Elfring |
| Ownership of Tissues and Cells | G. Ellis | C. Elfring |

Food and Renewable Resources

| | | |
|------------------------------------|-------------|--------------------|
| U.S. Insular Areas | A. Hess | S. Wintsch |
| Structure of American Agriculture | M. Phillips | K. Van Wyk |
| Biological Diversity | S. Shen | L. Starke/L. Olson |
| Low-Resource Agriculture in Africa | P. Windle | C. Elfring |

Health

| | | |
|---------------------------------------|------------|---------|
| Medicare's Prospective Payment System | J. Wagner | K. Kemp |
| Payment for Physician Services | J. Sisk | K. Kemp |
| Blood Policy and Technology | L. Milke | [none] |
| Tropical Diseases | H. Gelband | K. Kemp |

DIVISION C: SCIENCE, INFORMATION, AND NATURAL RESOURCES

Communication and Information Technologies

| <u>Assessment</u> | <u>Survey respondent</u> | <u>Editor</u> |
|-------------------------------------|---------------------------------|----------------------|
| Intellectual Property Rights | L. Garcia | S. Walton |
| Office Automation | V. Coates | [none] |
| Social Security | V. Coates | [none] |
| Government Information Technologies | J. Smith | [none] |

Oceans and Environment

| | | |
|-------------------------------|-------------|--------------|
| Wastes in Marine Environments | H. Levenson | unidentified |
| Ocean Incineration | H. Levenson | unidentified |

Science, Education, and Transportation

| | | |
|---------------------------------------|---------------------|-------------|
| Regulatory Environment for Science | E. Page/N. Naismith | [none] |
| Research as Investment | E. Page/N. Naismith | K. Finneran |
| Transportation of Hazardous Materials | E. Page | N. Graybill |