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## Appendix A

# STATEMENT OF THE OUTGOING CHAIRMAN, TECHNOLOGY ASSESSMENT BOARD 94TH CONGRESS, DECEMBER 1976

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# REPORT OF THE CHAIRMAN, CONGRESSMAN OLIN E. TEAGUE, TECHNOLOGY ASSESSMENT BOARD-94TH CONGRESS

December 1976

## Introduction

This report is a summation of observations and commentaries on the operation of the Office of Technology Assessment, primarily during the 94th Congress. Having served as chairman of the Technology Assessment Board during that period, I believe such a report to my colleagues on the Board is appropriate.

It is not my intent to include here a large bundle of data and statistics in order to make a point—or to disprove one. And while I will not attempt to document every statement of fact, it should be clear that each such statement *can* be documented if necessary.

It should also be understood that there are reasons for opening this report with a review of how and why OTA came into being: (a) we have a totally new Administration for the first time in many years; (b) the face of the 95th Congress is quite different from its immediate predecessors; and (c) many members of the Senate and House—veterans and novices alike—are not acquainted with OTA, its history, its mission, or what it offers.

Olin E. Teague

## 1. Evolution of the Office of Technology Assessment

### *Early History*

OTA evolved, purely and simply, because Congress felt a need for a new and independent source of evaluated information bearing upon technological problems and programs which it faced—or which it might be expected to face in the future. It represented a service not then available to the legislative branch.

That is the “why” of it.

But OTA did not arrive on the scene overnight. The concept required over 6 years to mature and another 2 years to put through the legislative process. It was one of the more thoroughly studied, debated, and molded concepts of our time—and while few contend that it is without flaws (and some question whether it is an innovation), both House and Senate adopted it with enthusiasm and, I believe, are convinced of its value.

Congress described the fundamental need of OTA in these statutory terms:

- it is necessary for the Congress to—  
(1) equip itself with new and effective means for

securing competent, unbiased information concerning the physical, biological, economic, social, and political effects of such [technological] applications; and

(2) utilize this information, whenever appropriate, as one factor in the legislative assessment of matters pending before the Congress, particularly in those instances where the Federal Government may be called upon to consider support for, or management or regulation of, technological applications.

Congress defined the mission of OTA as follows:

The basic function of the Office shall be to provide early indications of the probable beneficial and adverse impacts of the applications of technology, and to develop other coordinate information which may assist the Congress.

Taken in conjunction with the balance of Public Law 92-484, OTA's organic act, the foregoing constitutes the “how” of it, \*

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\*P.L. 92—484 is included as appendix F of this Annual Report.

## *Differences From Original Concept*

It is important to understand two major organizational facets of OTA which now exist but which, although carefully contemplated, were never recommended or intended by the committee of origin—the (then) House Committee on Science and Astronautics.

The first of these is the current character of the Technology Assessment Board itself. The original legislation reported from the committee included a Board composed of appropriate members of Congress, representatives from the public, the Comptroller General, the Director of the Congressional Research Service, and the Director of OTA. The function of the Board, then as now, was entirely one of setting policies to guide the operation of the office.

The second departure was the creation of the Technology Assessment Advisory Council to serve the Board in an advisory capacity. Of course, the Council or something like it became necessary when the House, by floor amendment and with only brief discussion, discarded the original Board concept and substituted an all-congressional Board—in which the Senate concurred after making sure that both political parties would be equally represented thereon. This all-congressional format of the Board made patent the need for some new mechanism to maintain adequate liaison with the public. Hence the Technology Assessment Advisory Council, which, again, was formulated with marginal study and consideration.

These observations should not necessarily be construed as critical of the OTA structure as it finally has emerged. On the other hand, there is little doubt that a number of the difficulties which have confronted OTA thus far—certain managerial problems as well as the Board's disposition to think and act on occasion as a joint committee rather than a board of directors—can be directly traced to deviations from the original plan. Of course, the original plan would have produced its own set of hurdles—whether more or less we do not know. Most impartial students of OTA seem to think the original concept offered less chance for polarization, whether on the basis of political party or the basis of Senate vs. House, as well as less political motivation in personnel appointments and in the choice and evaluation of assessments. Obviously, this is speculation.

I believe, however, that both institutions—the Board and the Council—should be reexamined at an appropriate time

## *Budget Background*

OTA technically was authorized in October 1972. It received no funding until late 1973. It became operational, for practical purposes, in the spring of 1974. It has, in other words, been "operating" for slightly more than 2½ years.

Below is a summary of the annual appropriations to OTA thus far. \*

Fiscal 1974—\$2.00 million  
Fiscal 1975—\$4.04 million  
Fiscal 1976—\$6.14 million  
Fiscal 1977—\$6.79 million

## *Assessment Record*

According to statutory authority, requests for OTA's services may be made through the chairman of any committee of Congress, or inaugurated by the Board or the Director.

The number of different subjects on which requests for assessment have been made are as follows:

1973— 3  
1974—89  
1975—43  
1976—43

Of these assessments, 15 originated with the Board and almost all the remainder were requested by individual committees. The 178 different subjects presented to OTA for consideration were contained in 116 separate requests for assessment.

The status of those subjects is:

Completed—38  
Ongoing—59  
Planned—28  
No Action—53

Note that "no action" means primarily either no-funds-available or the Board is undecided on approval. It may also indicate that some question of duplication or of relevance exists.

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\*Totals do not reflect supplemental or carryover provisions

## IL Appraisal of OTA to Date

Any attempt to make a definitive evaluation of OTA at this time would be, to my mind, unproductive. There are many reasons for this, some of which will become evident later in the report. Fundamentally, however, the difficulty of now evaluating OTA rests with the low visibility and the deliberate pace OTA has adopted and which its budget enforces.

I am neither complaining nor excusing in making this point. I am not at all convinced that the chief mode of operation utilized by the Office thus far, mainly a disposition to feel its way, is a bad approach. I am unmoved by some of OTA's critics who allege lack of effectiveness due to unnecessary caution with assessments, overly conservative management, or political timidity by the Board. Such critics, who are not, incidentally, a majority of those studying and observing OTA in depth, seem to be seeking to manufacture controversy or else they are uninformed of the nature of OTA, its purpose, its background, its uniqueness, and its statutory and material limitations.

### *Evaluation Indicators*

Nonetheless, there are some indicators which are useful in making a tentative appraisal of OTA.

One of these is the number of requests for assessments. As we have already seen, the Office is being asked for considerably more help than it has funds to provide. It is true, as some have pointed out, that a lot of the requests came from or were inspired by members of the Technology Assessment Board itself—perhaps as many as two-thirds of them in the first year or so. However, as OTA has become better known the situation has markedly changed. Today only one-third of *all* assessment suggestions received by OTA have been or are related to the Board or any of its members.

A second indicator is the quality of the OTA completed assessment—rarely an easy thing to gauge. Some committee chairmen and members have communicated with OTA following its response to their requests, indicating both appreciation and approbation. Others have merely acknowledged receipt of the assessment. I am disinclined to regard either as a reliable—certainly not a conclusive—standard for judging the quality of OTA's work. Nor is there much to be gained by giving too much

weight to outside critics of OTA assessments when few of them possess genuine insight into the technology assessment rationale *as it pertains to Congress*. [There is a difference.] Most do not understand that an assessment is not designed to be the *answer* to any given legislative problem, but is a *tool* to help legislators arrive at an answer—one tool among many. [See Sec. 2(d)(2) P.L. 92-484.]

To me, a much more significant measure of OTA's work quality is the fact that committees which have received OTA assistance the first time are coming back for more. Of all the standing, select, and joint committees of Congress which conceivably could make use of OTA, two-thirds have made requests to the Office in its first 30 months of operation. Of these committees, half have requested new assessments after receiving the results of their first ones—and a number of the remaining initial assessments requested are not yet due.

This, I think, means something.

A third indicator is the growing frequency with which OTA is being brought into the substance of legislation introduced into the Congress and thereby instructed to perform some additional statutory role.

During the 94th Congress alone 35 such bills were introduced and several were enacted into public law, including the Federal Railroad Safety Act and the Federal Coal Leasing Amendments Act. An Appropriations Conference Report also directed an OTA assessment of an auto crash recorder system proposed by the Department of Transportation

### *Report of the House Commission*

In June 1976, the House Commission on Information and Facilities, pursuant to a resolution directing it to study the organizational framework of OTA, the Congressional Research Service, and the General Accounting Office, released its first report—which dealt with OTA.

For the most part the House Commission followed its legislative mandate and stayed close to organizational problems. It was particularly concerned with relationships with the Advisory Council, contracting arrangements, staff operations and size, personnel procedures, accounting systems, budget administration, delegation of au-

thority, liaison with congressional committees, and the like.

This report—which was critical in a number of ways, laudatory in some, and often perceptive—nonetheless placed its greatest emphasis on identifying *potential* difficulties rather than *existing* ones. The report has proved a valuable aid to the Office, and we are grateful for it. I, personally, have been particularly struck by the Commission's timely observations on the need to maintain the Board's policy role (vis-a-vis an operating one) and toward staff employment and salary practices. The Commission's recommendations for improvement in these areas, among others, deserve continuing attention,

My reservations of the Commission's report are mainly two.

First, the report concerned itself with OTA activities only up to July 1, 1975. At that time OTA had been operational for a total of about 15 months—not very much time on which to base an evaluation. It is to the Commission's credit that it took this circumstance into account throughout most of its study.

Nonetheless, since nearly a year of additional OTA operation had elapsed by the time the report was issued, I felt it would be useful to provide complete information on OTA's work. Thus in July 1976, the Office prepared at my request a Status Report to supplement the Commission's study. The OTA report, and my introduction to it, was viewed in some quarters as designed to refute the Commission's study. It was not. The intent was to provide as much up-to-date factual information as possible to the Board and the Congress for use in future surveys and budgetary reviews of OTA.

My second reservation stems from the Commission's inquiry into the assessment process itself. There is considerable doubt in my mind whether treatment of the technology assessment concept and the still-developing processes of implementing it—important as they are for a general understanding of OTA's operations—were appropriate areas for findings and recommendations. And while I quite agree with the Commission's suggestion that OTA's organic act should be reviewed in this and other areas, I strongly question certain conclusions suggested by the Commission. I refer particularly to implications that (a) OTA's chief functions are necessarily prognostic in nature and (b) that the term "Technology Assessment" should necessarily be precisely and probably narrowly defined,

In this regard, I should like to point out that these exact questions were the subject of intensive scrutiny, at congressional request, by a number of com-

petent outside study groups as well as the House Committee on Science and Astronautics for years before hearings were ever held on specific legislation. They were by no means uninvestigated issues; their treatment in the Act reflects this part of the legislative history, which is not alluded to in the Commission's study. Moreover, it has been my experience that relative to the art of legislative drafting, the prudent choice is to take the broad course rather than the narrow one when dealing with unknowns or developing and shifting situations. Technology assessment has been and remains in this category.

In any event, as this Congress expires I believe many of the Commission's concerns have been met, corrected, or adjusted. Others will be the subject of intensive study in 1977 and will be described later herein.

### *Appropriations Conference Commentary*

The conference report on the Legislative Appropriations Act for 1977, which included funds for OTA operations for next year, singled out three OTA program areas which "have especially sound plans" and which have been "especially successful in identifying and responding to congressional needs." Those cited were the energy, oceans, and transportation programs. The report added that these programs should be fully supported but expressed reservations about "a number of other studies" and suggested they be carefully and critically reviewed as possible "nonproductive." The "other studies" were not identified, nor were certain OTA "weaknesses" to which the report referred.

I commend my colleagues for their insight on such matters and fully concur in their observations, as far as they go.

However, I believe that most Board members would agree with me that OTA's programs in materials and health have been equally productive and useful and that a number of others may have been inadvertently down-graded by the appropriations conference report since they are in the long-range category. This latter point is essential to an understanding of OTA's mission. The fact that more assessments may have been completed in certain program areas can be misleading if that is taken as a criterion of overall utility. Many requests for OTA assessments—including most of those in the categories specified by the conference report—have had early deadlines, forcing concentration in these areas. Others require long leadtimes.

It will be unfortunate indeed if OTA is caught in a bind between such important appraisals as those

projected by the House Information Commission—preferring emphasis on prognostic, long lead-time endeavors—and the prestigious viewpoints of the Appropriations Committees which seem to regard OTA's slower-paced assessments as “non-productive” or “under-productive.”

For reasons already mentioned, I hesitate to pin a comparative quality rating on any of OTA's work to date. I am sure my appropriations colleagues are not prepared to take that step either. It is essential that we in OTA develop reliable assessment quality control, and I am certain we shall; but it will take time.

### III Facilities and Funding

#### *Facilities*

On numerous occasions the difficult working facilities in which OTA operates have been brought to the attention of appropriate authorities—but without significant improvement.

I recognize the tight space situation which plagues all of us on the Hill. But I suggest that OTA's archaic quarters, plus its scattering over seven different locations, is particularly burdensome. Inevitably, it reduces the efficiency of the Office staff by a sizable margin. To the best of my knowledge, no more than one or two members of Congress other than myself have ever visited OTA's working quarters. If more members do so in the future, the seriousness of the problem might be recognized.

In addition to the excessively poor environmental quality of most of the workspace, there is far too little of it and virtually no privacy for anyone other than the Director and his Deputy. By way of comparison, General Services Administration standards specify that space available to Federal workers should average across the board at about 150 square feet per person. For OTA's seven locations, the average is about 73 square feet. The statistic speaks for itself.

I believe much can be accomplished if the Office staff, at a minimum, is assembled in one place. I urge my colleagues on the Board to do all they can to induce this transition as rapidly as possible.

#### *Funding*

Annual funding for OTA has been summarized earlier in this report. In addition, the reasons for not increasing OTA's basic funding for fiscal year 1977, and my response to that decision, have similarly been discussed. I will add here only the observation that the 30 percent of the requests for assessments which OTA has thus far been unable to field are mostly in that category for budget reasons.

The cost of assessments, the majority of which involve outside contracts, is not great; but neither is it small. Assessment costs have ranged from \$11,000 to more than \$800,000—with the average running between \$200,000 and \$300,000. Administrative costs are normal, particularly for a developing agency—in the 11- to 15-percent range which includes Board, Council, Public Affairs, and informational activities.

If the Congress expects OTA to provide services at the rate it is requesting them, it should also provide an adequate budget to get the job done.

## IV. Personnel

Since its inception OTA has been subjected to a variety of pullings and haulings over the size of its in-house staff—which for the present has stabilized at a relatively modest 120. Some think the in-house staff should be considerably enlarged. Others do not. I am among the latter for these reasons:

- (1) The small staff concept with major outside contracting is the basis on which Congress approved OTA.
- (2) A large in-house staff tends eventually to become inbred and predictably biased in its views.
- (3) The variable content of OTA's total task, if performed in-house, would require an excessive technical staff, or excessive turnover of personnel with loss of continuity, or descent to a quasi-technical superficiality.
- (4) More varied and superior talent can be obtained more economically by the contract-consultant method.

To date, on the plus side of the personnel picture, OTA has shown itself to be particularly adept at forming good advisory panels to oversee its various assessment tasks. This is also true of its estimates of need for short-term consultants, who have proved to be a critically useful element in the OTA mode of operation.

On the other hand, it seems to me there is, or soon will be, a need for an advanced quality-control system with regard to selection of both in-house staff and nonpanel, individual consultants—especially now that OTA is moving into more sophisticated phases of operation.

It is my impression, after 2 years of personnel endorsement duty as Board chairman, that some OTA staff and consultants are recruited mainly on the basis of paper or political qualifications or the summary judgment of OTA program managers who need somebody in a hurry. These factors may be important at times; they are not a substitute for careful background evaluation, particularly in an organization such as OTA, the staff of which is small but influential and which should be characterized by appropriate training, experience, and proven ability. The number of personnel I am concerned about is not large; the point is the Office cannot afford to harbor misfits or incompetents.

### *Board /evolvement*

The foregoing necessarily brings up the question of why Board members, including the chairman, should become involved in personnel matters at all. I cannot think of a rationale, on any theoretical basis, why we should. It seems to me that personnel selections, pursuant to basic *policies* set by the Board, should be the responsibility of the Director in accordance with OTA's organic act.

However, this concept has been largely negated by Rule #12 of the Board's "Rules of Procedure" which says—"The Director shall appoint *with the approval of the Board* . . . certain officers and such additional staff as may be necessary. " The same rule also provides for the appointment of a professional staff member by the chairman and vice chairman of the Board "in each Congress" as well as the ranking Board member of the opposite party in each house. Subsequent to the adoption of this rule the Board agreed, informally, that the same privilege should apply to all Board members.

In the beginning Rule #12 probably made sense since most Board members were not familiar with the Technology Assessment Act and needed specialized assistance. I am, further, realist enough to recognize that members might want staff personnel in OTA whom they knew and whose judgment they valued.

Since that time, however, I believe the rule has come to have little utility. Only 7 of the 16 members who have served on the Technology Assessment Board since it was first created have taken advantage of the rule and/or the informal agreement. At this point, it seems to me, the rule is not only inequitable and obsolete but contains a dangerous potential for creating in-house divisiveness or an unnecessary drag on OTA's budget. I note that the House Commission on Information and Facilities was disturbed by this situation in its report this year. I am by no means suggesting that any personnel appointments already made under the rule or the agreement be rescinded. I *am* suggesting the abolition of Rule #12 in its entirety as currently inappropriate.

I also would like to reiterate the need to intensify OTA's current efforts to develop a more comprehensive and detailed format for assuring quality control of OTA employees. The outline of personnel recruitment set forth in the July 1976 Status Report of the Office provides, as I indicated then, a



good foundation. With some refinement, amplification, and strict adherence it could form a basis for Board approval as general policy—after which implementation should be left to the Director.

### *Pay Scales*

OTA employees are classified as congressional employees. Their pay scales, compared with those of other employees of the legislative branch, are high but not out of line when all factors are considered.

According to information I have requested, OTA's professional staff averages about \$27,000 per annum. Its support staff averages about \$12,000.

A reasonably close comparison maybe made with the new Congressional Budget Office (CBO) which has 193 employees-its professionals averaging just under \$27,000 and its supporting staff about \$14,000.

The 60-member staff of the House Science and Technology Committee, which I chair, uses a pay scale that is probably average or a bit above for the House of Representatives. Our professionals [who also must have special experience and qualifications] average just under \$28,000, and our supporting staff about \$12,400,

The Congressional Research Service professional staff averages about \$19,400, its supporting staff about \$9,000.

The General Accounting Office professional staff average is also about \$19,400, its supporting staff about \$10,400. [All figures predate the October 1976, pay raise.]

However, the functions, the employee security risks, and the many different levels of professional requirements make these organizations quite different. Also, compared with OTA's 120 employees, CRS has more than 800 and GAO more than 5,300. For the most part, the situations are not comparable.

The major difference in OTA pay philosophy, from that of other legislative groups is in the number of professionals receiving the maximum permissible pay. At OTA about 24 percent receive maximum pay, At CBO it is 18 percent. At CRS the figure is 10 percent. At GAO it is 3.3 percent. On the House Science Committee it is less than 2 percent.

I recognize that the OTA percentage is inflated due to the early bandwagon syndrome which seems to accompany most newly formed Government entities. Nonetheless, I suggest a conservative approach in the hiring of future OTA employees at this level until a more even balance is achieved.

## **V. Board Procedures**

I doubt if any member of the Technology Assessment Board is satisfied with the way the Board operates. Undoubtedly the reasons are varied, but I think two can be pinpointed.

- (1) Meeting rooms satisfactory to members of both Senate and House are extremely limited. Their availability, in fact, determines when and where the Board can meet and makes a mockery of the supposed authority of the chairman to convene the Board whenever necessary.
- (2) An all-congressional Board is not suited for the kind of detailed, often operational considerations which have formed a considerable part of its agenda. Very few Board members have the time or disposition to get into issues which do not involve major policy.

The attendance record at Board meetings (following the first four or five sessions), has not been impressive. In 1974 it was 56 percent; in 1975 it was 57 percent; in 1976 it was 45 percent. And these figures create a false impression since many members who attended did so for only a few minutes or only for the duration of the discussion with which they had special concern. A more accurate figure for sustained attendance during the 94th Congress is probably 25 percent or less. Rarely has a quorum been present—and then usually for a very short time due to floor action requiring the presence of Board members in their respective chambers.

Certainly this observation is not intended in a pejorative sense. My own attendance record is far from exemplary, and I well understand the pres-

tures on Board members which make it impossible for them to give full attention to the Board throughout its scheduled meetings.

But I see no reason why we must continue to follow a format which is largely ineffective and wasteful. I believe it is time to revise some of our procedures and wish to offer a few suggestions for the Board to think about.

### *Rules Revision*

The Board's Rules of Procedure were drafted at a time when the Board had no choice other than to establish rather quickly some basic foundation for its operations. Adequate and useful at the time, those rules, I believe, are now outmoded in some ways. I have already suggested that Rule 12 be abolished. I believe others should be modified and possibly new ones added.

For example, I believe serious thought should be given to a revision of language in Rules 1 and 4 and to the elimination of Rule 13. [See attachment.]

With regard to Rule 1, there seems to be an anomaly inherent in the language since the rules of the two houses are frequently different. In Rule 4, I dislike use of the word "hearings" since this tends to accentuate the idea, already too widely held, that the Board is *de facto* a joint committee. Further, I doubt the need for a Board vote in this matter as we have known it so far; it might more effectively be subject to the approval of the chairman or an executive committee—discussed later. Rule 13 seems superfluous. The Act provides this authority and it can easily be carried out according to administrative instructions by the chairman. And, again, it seems cumbersome and unnecessary to bring the entire Board into this area for whatever reason.

I would point out that with regard to Rules 4 and 13, experience has shown that 99 percent of the time the Board does not want to be bothered. When it does want to concern itself, or when any single member so desires, the chairman and the Director are available and have always proved responsive to such interest.

Now I should like to offer some additional procedural suggestions based on OTA's experience to date as I perceive it.

- (1) In view of general attendance difficulties and the scarcity of available quarters suitable for Board meetings, the Board should consider the possibility of establishing a TAB executive committee to handle most of the matters which heretofore have been placed before the

full Board. There are a variety of forms such a committee could assume. I believe a workable model might consist of five members: two members from each house, one from each party, selected by the chairman and vice chairman, plus the Director, the chairman of the committee to be designated by the chairman of the Board. Meetings of the executive committee could be either scheduled or called as needed with far fewer limitations imposed by meeting space or conflicting schedules of members. The chairman of the Board might well serve as the chairman of the executive committee. Any Board member should be able to participate in executive committee meetings if desired.

- (2) If the foregoing were to be adopted, there could be fewer full Board meetings. The chairman could and should retain the option of calling meetings of the full Board at any time, as well as a majority of the members themselves. But the format to date of having frequent regularly scheduled meetings has been, I think, unproductive in many ways and a serious drag on the efficiency of OTA's staff which must expend much time and effort in preparation for formal public meetings. The problem is compounded for those staff members who must make presentations at such meetings, since it means a lot of time away from their substantive work. Even when the Board meets only once a month that loss can be substantial.
- (3) If an executive committee or some similar group should be established, one of its functions should be to review for approval the preliminary or interim phases of assessments. It should further determine routine policies—administrative, interagency, and those of a liaison nature with the congressional committees. It should identify issues and subjects to be considered by the full Board.
- (4) The executive committee concept should carry with it, I think, a brief but complete monthly report from the Director to all Board members summarizing the substance of committee meetings and/or actions taken or contemplated.
- (5) I suggest that the Board not be asked to consider the approval or transmittal of any final assessment which has not been available to members at least 3 working days in advance.
- (6) I suggest that considerable attention be given by the Board to the concept of "hearings." There is no question that authority for such proceedings exists, but I doubt the wisdom of employing them except in very unusual

circumstances. The reason is that Board “hearings” tend to be brief one-man shows, instigated and presided over by the member of immediate interest. They do little to foster the Board’s reputation or status among either public or peers. It would seem to me that in lieu thereof, the chairman or the executive committee should be authorized to approve “inquiries” or “investigations” by one or more members acting as temporary task groups for the Board—but that any full-scale “hearings,” however labeled, be permitted only by majority vote of the Board and that such proceedings require the presence of a quorum to sit. In this way we can be sure that any “hearings” are germane to the interests of more than one or two members without restricting such members from pursuing their other legitimate objectives, as representatives of the Board, in a less pretentious forum.

- (7) At present, Board meetings take place in area-s which are cramped, poorly ventilated, with poor acoustics, and vulnerable to a variety of disruptions. A big part of the cause is

that there is much public interest in OTA—which I choose to interpret as a symbol of growing awareness and influence of the Office—and seating space is quite limited. I therefore suggest that, in the absence of better meeting places and/or something like an executive committee, which would have a wider option of meeting places and could conduct its business more rapidly, the Board give serious consideration to an alternate system of handling at least minor and routine business. If some method of this kind is not worked out and if OTA’s activities continue to accelerate along with public interest therein, the Board may well be forced into closed meetings—with all the political ramifications that entails,

Whatever attention the Board may or may not give to these observations, I sincerely hope it will appoint a review group of some kind to take a new look at its Rules of Procedure. We need a set of rules which is brief, flexible, and, above all, realistic. Our experiences to date indicate that some changes must be made if such criteria are to be met.

## VI. The Technology Assessment Advisory Council

Earlier in this report there is a brief citation to the manner in which the TAAC was formed. In effect, it was something of an afterthought, an entity not extensively planned.

Moreover, the Technology Assessment Advisory Council received very little attention, in its formative stages, with regard to a capability of working well together as a team. Although hewing technically to the Rules of Procedure, the Board in fact chose TAAC members according to its personal predilections and with much emphasis on geographical distribution. I was as parochial in my approach to TAAC as any other member of the Board—and hence share whatever praise or blame may attach to the Council as presently constituted,

I am not, however, convinced that our method of selection was necessarily wrong. The Council is made up of some very excellent people and has performed some very useful services. So far it has been involved in five substantive programs where it has had considerable responsibility—and has provided advice, critiques, recommendations, etc., in half a dozen other areas.

The cost of the Council is moderate and is currently running at less than \$100,000 a year.

### *Effectiveness*

While not prepared to say that the Board’s mode of selection of TAAC members was wrong, neither am I prepared to say it was right. This is something our House committee of OTA jurisdiction may wish to study next year.

Certainly the Council has not been as coordinated, focused, or effective as one might wish in its performances during the 94th Congress. I believe there are two main reasons for this.

*First*, there has been some misunderstanding as to the Council’s relationship to OTA and regarding its appropriate functions. TAAC is not technically a part of OTA. It is a statutory body advisory to the Board but not to the Director. This maybe viewed as legalistic quibbling, but I consider it a major segment of whatever the Council’s problems have been or are. On some occasions, and on the part of all parties concerned, there seems to have been an assumption that TAAC should become involved with operational and administrative matters as well as policy or substantive issues. Such is not the case—unless the Board invites operational involve-

ment, and even then I am uncertain of the Board's authority to so act.

*Second*, the Board in my view, and in part during my chairmanship, has failed to provide the Council with adequate guidance. We have too often left the Council to shift for itself; we have frequently left the Director in an awkward situation for the same reason, putting his office in the untenable position of acting as surrogate for us; in short, the Board has not developed a cohesive program—even in general terms—for the Council and requested TAAC to carry it out. What could be an even more serious error would be our sanction for the Council to coordinate and be responsible for a major OTA program activity—a situation which is approximated in the national R&D programs and priorities area, even though most of the staffing is OTA's. I was among those who raised no objection at the time, but, on reflection, I believe that move had a potential for setting a bad precedent and should not be repeated. The Council should not be expected to be responsible in any significant way for a specific OTA operation requested by a congressional committee or committees. This is not its function.

### *Future Role*

At the same time, I do not regard the situation as insolvable or, at this stage, even abnormal.

It is axiomatic in the industrial world that entrepreneurs into new business areas must have assurance of sufficient capital to carry them for 5 or 6 years without profit, if they want eventually to succeed. This is because they must (a) build a market, and (b) overcome early mistakes that are bound to occur.

The same is true, I think, for OTA. We have troubles, but we are straightening them out—including

those with TAAC, which are particularly tricky due to the nature of the Council itself and the limited time its members can afford to give to OTA activities.

A year ago I addressed a letter to the then chairman of the Council, Dr. Harold Brown, president of the California Institute of Technology, in which I outlined five areas where I felt TAAC could make real contributions. \* I believe those same needs exist, but I would like to add 'a sixth.

That is a Council review and determination of criteria necessary to an effective quality control of assessments.

It should be made clear that the intent here would not be to put the Council in the role of a judge or censor regarding assessments prior to or after such action as the Board may take. Neither does it imply preemption of this duty vis-a-vis the Director's office—which I believe must exercise this function regularly and in a carefully fashioned and rigorous way.

What I am recommending is the formation of a set of indicators against which completed assessments can be thoroughly reviewed as to method, content, and responsiveness—and eventually rated on a scale of quality to be formulated by OTA on an empirical basis. The conclusions and the reasons for them should be fed through the Director's office as an important input toward improving his total quality-control system for future assessments.

The foregoing are some possible facets of the Council and the issues surrounding it which the Board may wish to study in the future. In any event, the OTA advisory system is another subject which now seems appropriate for legislative reappraisal as well.

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\*See the 1976 OTA Annual Report.

## VII. Legislative Review, 1977

The Technology Assessment Act creating OTA is now in its fifth year. To date that Act and OTA's operations have been reviewed only by the House Commission on Information and Facilities and the Commission on the Operation of the Senate; the report of the latter is not yet available.

Neither Commission has had a part in the original formulation or in the functioning of OTA; but I am mindful that the House Commission, in its report on OTA, recommended several times that

the Act be reviewed with an eye to possible improvements.

Most of us who have served both as Board members and as members of the House Committee on Science and Technology (formerly Science and Astronautics), which was the principle originator of the Technology Assessment Act, agree with this recommendation. I had, in fact, determined independently that the House science committee, which I chair, or one of its subcommittees, should make

such a review in 1977. As the committee of legislative jurisdiction of OTA in the House, this is one of our responsibilities. I had not wanted to initiate such a review earlier since the Office had little operational experience; nor did I wish to undertake the task while serving simultaneously as the OTA Board chairman. But I believe a useful survey by the committee can be started by this spring or summer—or earlier if necessary.

### *Potential Subjects for Review*

In considering the basic Act, we shall need to determine (a) what changes may be in order, and (b) whether they can better be effected with legislative revision or without such revision,

The topics for review cannot now be definitively identified, but I should think they might include:

- (1) The composition and duties of the Technology Assessment Board.
- (2) The nature, particular needs for, and appropriate functions of the Technology Assessment Advisory Council.
- (3) Methods of staff appointments and personnel selection, whether for the Director's office, the Board, or the Council.
- (4) Organization of the Director's office and what statutory requirements, if any, may need to be applied.
- (5) OTA's relationship with the General Accounting Office and the Congressional Research Service.

- (6) Quality control systems affecting assessments and personnel placement.
- (7) Liaison between the Director's office and congressional committees, committee staffs, and with Board members and their staffs.
- (8) Types of recommendations which may or should be made by the Board.
- (9) Cost-benefit implications reassessments completed.
- (10) Budget and auditing systems.
- (11) Assessments or other duties mandated by legislation.
- (12) The definition of "technology assessment" and whether it should be narrowed or, on the contrary, increased in scope—or left alone.

May I make it clear to my colleagues on the Board that we will not be approaching any OTA review in the belief that we are under an injunction to go forth and right various calamitous wrongs. There is no such feeling prevalent. Our goal is simply a careful inquiry into the OTA endeavor, what seems to be working well, what is not, and how to smooth out the wrinkles.

### *Note*

In the foregoing commentary there is a mention of the report of the Commission on the Operation of the Senate, which contains certain observations and recommendations regarding OTA. That report, "Toward a Modern Senate," became available December 19, 1976, after this one was completed. However, it is expected that the Commission's recommendations will also be considered in the review process.

## **VIII. Attachment: Rules of Procedure, Technology Assessment Board**

Rule 1. The rules of the Senate and the House of Representatives, insofar as they are applicable, shall govern the Board.

Rule 2. The meetings of the Board shall be held at such times and in such places as the Chairman may designate, or as a majority of the Board may request in writing, with adequate advance notice provided to all Members of the Board.

Rule 3. The Chairman shall preside over meetings of the Board. In his absence, the Vice Chairman or other Board Member as the, Chairman may designate shall preside.

Rule 4. Hearings before the Board maybe convened by the Chairman or by a majority of the voting Members of the Board: *Provided*. That the Board shall not require by subpoena or otherwise the attendance of any witness, the

administering of any oath or affirmation, or the production of any book, paper, or document unless a majority of all the voting Members of the Board assent. The Chairman may designate any Member of the Board to preside over a particular hearing.

Rule 5. No recommendation shall be reported from the Board to either House of Congress, to any committee thereof, or to any Government agency or official unless a majority of the Board is present and a majority of all the voting Members of the Board assent: *Provided*. That any Member of the Board may make a recommendation supplementary to or dissenting from the majority recommendation.

Rule 6. The Board shall not appoint any person as Director of the Office of Technology Assessment, nor shall the Board remove any person from said position,

unless a majority of all the voting Members of the Board assent: *Provided*. A vote to remove the Director shall not be taken in less than 20 calendar days after a written motion for such a vote, signed by at least three Members of the Board, shall have been provided to each Member of the Board.

Rule 7. The Board shall not appoint any person as a member of the Technology Assessment Advisory Council unless a majority of all the voting Members of the Board assent.

Rule 8. Proposals for adopting, eliminating, amending, or modifying rules of the Board shall be sent to all Members of the Board at least two weeks before the final action is taken thereon, unless said action is taken by unanimous consent of all Board Members. No rules of the Board shall be adopted, eliminated, amended, or modified in any way unless a majority of all the voting Members of the Board assent.

Rule 9. Except as otherwise provided by any other Rule of the Technology Assessment Board, six of the voting Members of the Board actually present shall constitute a quorum, provided that such Members shall include at least one Member of each party and at least one Member of each House.

Rule 10. Proxy voting shall be permitted on all matters before the Board, provided that the absent Member has been informed of the matter on which he is being recorded and has affirmatively requested that he be so recorded; but provided further that no proxy shall be used at the first Board meeting of each Congress, or for the purpose of establishing or maintaining a quorum.

Rule 11. The vote on any matter before the Board shall be conducted as a rollcall vote when so requested by any Member of the Board. The result of each rollcall vote in any meeting of the Board shall be made available for inspection by the public at reasonable times in the Board offices. The information shall include a description of the motion or other proposition voted on, the name of each Member voting for and each Member voting against such motion or proposition, and the name of each Member present but not voting.

Rule 12. The Director shall appoint with the approval of the Board a Deputy Director, a General Counsel, and such Assistant Directors and additional staff as may be necessary. In addition, the Director shall appoint an Executive Secretary to the Technology Assessment Advisory Council upon the recommendation of the Chairman of the Council and with the approval of the Board. In each Congress, the Director shall appoint an immediate staff to the Board, including a professional staff member designated by the Chairman; a professional staff member designated by the Vice Chairman; a professional staff member designated by the ranking Senator of the party other than that of the Chairman in each odd-numbered Congress, and other than that of the Vice Chairman in each even-numbered Congress; a professional staff member designated by the ranking House Member of the party other than that of the Vice Chairman in each odd-numbered Congress, and other than that of the Chairman in each even-numbered Congress; and such other personnel as the Board may deem necessary.

Rule 13. In order to supplement the Advisory Council and provide the Board with expert advice in special assessment areas or with respect to special assessment problems, Advisory Panels may be established and qualified individuals may be appointed as consultants by the Chairman or the Director with the approval of the Board, or by a majority vote of the Board.

Rule 14. There shall be kept a complete record of all Board proceedings and action. The Clerk of the Board or an alternate Member of the Board staff designated by the Chairman shall act as recording secretary of all proceedings before the Board and shall prepare and circulate to all Members of the Board the minutes of such proceedings. Minutes circulated will be considered approved unless objection is registered prior to the next Board meeting. The records of the Board shall be open to all Members of the Board.

Rule 15. The order of business before the Board and any interpretation of the Rules of Procedure shall be decided by the Chairman, subject always to a vote on an appeal of his decision by a majority of the voting Members of the Board.