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Report of the

Defense Science Board

TASK FORCE ON SECRECY

1 July 1970

Office of the Director of Defense Research and Engineering
Washington, D.C. 20301

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OFFICE OF THE DIRECTOR OF DEFENSE RESEARCH AND ENGINEERING
WASHINGTON, D. C. 20301

6 July 1970

MEMORANDUM FOR THE SECRETARY OF DEFENSE

THROUGH: THE DIRECTOR OF DEFENSE RESEARCH AND ENGINEERING

SUBJECT: Final Report of Task Force on Secrecy

The following report of the Defense Science Board was prepared in response to a request of the Director of Defense Research and Engineering. The study was conducted by a special task force of the Board under the chairmanship of Dr. Frederick Seitz. In his memorandum of submittal Dr. Seitz emphasizes the need for "major surgery" in the DoD security system.

With the approval of the Defense Science Board, I recommend this report to you for your consideration.

Gerald F. Tape

Gerald F. Tape
Chairman
Defense Science Board

OFFICE OF THE DIRECTOR OF DEFENSE RESEARCH AND ENGINEERING
WASHINGTON, D C. 20301

1 July 1970

MEMORANDUM FOR THE CHAIRMAN,
DEFENSE SCIENCE BOARD

SUBJECT: DSB Task Force on Secrecy Final Report

The Task Force on Secrecy herewith submits its final report. This report, which has been coordinated with all members of the Defense Science Board, concludes the work of the Task Force.

The report addresses specific questions posed by the DDR&E in general terms since time and resources did not permit establishment of detailed steps required to correct the deficiencies identified in the present DoD scientific and technical information security classification system. These actions are more appropriately the responsibility of the cognizant DoD elements.

In addition, the Task Force considered security classification from the national long range and short range viewpoints. These combined considerations, i.e., the specific questions posed by the DDR&E and the national considerations, resulted in a general conclusion that the DoD security classification system requires major surgery if it is to meet the Defense, national and international environment of today. Specifically, we found that:

1. It is unlikely that classified information will remain secure for periods as long as five years, and it is more reasonable to assume that it will become known to others in periods as short as one year.

2. The negative aspect of classified information in dollar costs, barriers between U.S. and other nations and information flow within the U.S. is not adequately considered in making security classification determinations. We may gain far more by a reasonable policy of openness because we are an open society.

3. Security classification is most profitably applied in areas close to design and production, having to do with detailed drawings

and special techniques of manufacture rather than research and most exploratory development.

4. The amount of scientific and technical information which is classified could profitably be decreased perhaps as much as 90 percent by limiting the amount of information classified and the duration of its classification.

General recommendations to correct these deficiencies are contained in the report.

Frederick Seitz
Chairman
Task Force on Secrecy

PREFACE

Late in 1969 the Defense Science Board established the Task Force on Secrecy to consider questions pertinent to the classification of information in all stages of research, development, test and evaluation (RDT&E), as well as procurement and deployment.

The members of the Task Force were as follows:

Dr. Frederick Seitz (Chairman)
Dr. Alexander H. Flax
Dr. William G. McMillan
Dr. William B. McLean
Dr. Marshall N. Rosenbluth
Dr. Jack P. Ruina
Dr. Robert L. Sproull
Dr. Gerald F. Tape
Dr. Edward Teller
Mr. Walter C. Christensen (Staff Assistant)

In the course of its discussions, the Task Force consulted a number of individuals and groups, among whom were the following persons:

Dr. John S. Foster, Jr.
Director of Defense Research and Engineering
Dr. Gardiner L. Tucker
Principal Deputy Director of Defense Research and Engineering
Dr. Luis W. Alvarez
Professor of Physics, University of California, Berkeley
Mr. Joseph J. Liebling
Deputy Assistant Secretary of Defense (Security Policy)
Dr. Donald M. MacArthur
Deputy Director (Research & Technology), ODDR&E
Lt. Colonel John M. MacCallum
Advanced Research Projects Agency
Dr. Michael M. May, Director, and associates
Lawrence Radiation Laboratory
Mr. Walter McGough
Acting Special Assistant (Threat Assessment), ODDR&E
Mr. Rodney W. Nichols
Special Assistant to the Deputy Director (Research & Technology), ODDR&E

Vice Admiral Hyman G. Rickover, USN
Director of Nuclear Power, Naval Ship Systems Command
Rear Admiral Levering Smith, USN
Director, Strategic Systems Project Office, Naval Material Command
Dr. Eugene Wigner
Professor of Physics, Princeton University

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SUMMARY

General Comments

1. The Task Force considered the matter of classification from several viewpoints; however, it focused its main attention on the classification of scientific and technical information.

2. The Task Force noted that it is unlikely that classified information will remain secure for periods as long as five years, and it is more reasonable to assume that it will become known by others in periods as short as one year th ough independent discovery, clandestine disclosure or other means.

3. The Task Force noted that the classification of information has both negative as well as positive aspects. On the negative side, in addition to the dollar costs of operating under conditions of classification and of maintaining our information security system, classification establishes barriers between nations, creates areas of uncertainty in the public mind on policy issues, and impedes the flow of useful information within our own country as well as abroad.

4. The Task Force noted that more might be gained than lost if our nation were to adopt--unilaterally, if necessary--a policy of complete openness in all areas of information, but agreed that in spite of the great advantages that might accrue from such a policy, it is not a practical proposal at the present time. The Task Force believes that such a policy would not be acceptable within the current framework of national attitudes toward classified Defense work. A number of areas of information in which classification may be expected to continue are listed in the text.

5. The Task Force noted that the types of scientific and technical information that most deserve classification lie in those phases close to the design and production, having to do with detailed drawings and special techniques of manufacture. Such information is similar to that which industry often treats as proprietary and is not infrequently closer to the technical arts than to science. The Task Force believes that most of the force of attention in classifying technical information should be directed to these phases rather than to research and exploratory development.

6. In the opinion of the Task Force the volume of scientific and technical information that is classified could profitably be decreased by perhaps as much as 90 percent through limiting the amount of information classified and the duration of its classification. Such action would better serve to protect that information necessarily classified since then the regulations concerning the enforcement of classification could be applied more rigorously than at present.

Recommendations

General

1. Selectivity in classifying. In overhauling our classification guides the advantages that might accrue from inhibiting the acquisition of the information by a competitor or potential enemy through classification should be balanced against the advantages of possibly speeding development in the U. S. through not classifying the information.

2. Time limit on classification. Whenever a document is classified a time limit should be set for its automatic declassification. This time limit should be adapted to the specific topic involved. As a general guideline, one may set a period between one and five years for complete declassification. (Note, however, the exemptions stated below for certain types of information.) This time limit should be extended only if clear evidence is presented that changed circumstances make such an extension necessary.

3. Declassification of material now classified. All material now classified should be reviewed as soon as possible after the adoption of the new policy; we hope this might be accomplished in as short a time as two years. The review should either declassify the document or set an appropriate date for its declassification.

Research, Development and Deployment

1. As a general rule, research and early development should be unclassified. Thus in the main, 6.1 and 6.2 should be open, while 6.3 may be classified. The partition between 6.2 and 6.3 is not rigid, and classification should be tailored to fit the individual circumstances.

2. In general, we expect classification to be most justifiable when the development approaches the "blueprint" stage. This coincides with the phase when expenditures become substantial. Protection is most desirable when an item requiring a considerable lead time for development is being prepared for deployment.

3. After deployment, classification may be reduced or canceled. At that stage, the information will have been disseminated to many people so tight classification may no longer be realistic. Secrecy will usually be most valuable in maintaining a technological lead during the period of development.

4. The Task Force believes that the "Confidential" category is not appropriate for R&D programs and that "special access" limitations are more likely than not to seriously impede difficult technical programs.

Plans and Operations

1. In contrast, the information involved in high-level planning requires rigid protection on a need-to-know basis. To declassify such information would not speed technical development; the contingencies envisaged in such planning may never arise, and their publication may cause ill feelings. The only reason for declassification is the interest of the historian. Stringently limited distribution and extended classification time limits may be justified in this category.

2. Information relating to specific operational plans should remain classified as long as the plan is in effect--and perhaps even beyond, insofar as declassification could reveal genuine details of possible use to a potential enemy in developing countermeasures. If secrecy is required, the best protection is afforded by frequent changes in the pattern of operations. Classification of a specific operational plan should be promptly canceled if it becomes irrelevant.

Responses to Specific Questions

The Task Force's responses to specific questions posed in its charter are as follows:

Question: Is our security system generally effective in denying to potential enemies DoD information that affects the national security? As corollary question, how long can we reasonably expect that classified information will remain unknown to potential enemies?

Response: Security has a limited effectiveness. One may guess that tightly controlled information will remain secret, on the average, for perhaps five years. But on vital information, one should not rely on effective secrecy for more than one year. The Task Force believes that classification may sometimes be more effective in withholding information from our friends than from potential enemies. It further

emphasizes that never in the past has it been possible to keep secret the truly important discoveries, such as the discovery that an atomic bomb can be made to work or that hypersonic flight is possible.

Question: Granted that excessive use is being made of classification and limitations on distribution, what practical steps can be taken to better define the DoD information that should be protected in the interest of national security? Consideration of this question should include the cost and effect of controlling DoD information to the U. S. and its allies, versus the benefits to potential enemies of its open release.

Response: Starting from the premise that the interests of an open society and the speedy exploitation of technology are best served by minimal classification consistent with essential security, the Task Force identified a number of critical areas to be discussed below, in which continued classification appears justified. These critical areas span a much narrower region, however, than is now included under existing classification rules.

The Task Force felt equipped to recommend only general philosophy, as opposed to detailed classification guidelines. Also, we did not consider monetary costs of security measures but only their likely inhibition on U. S. technological development.

Specifically, it is recommended that the present emphasis, that promotes classification, be reversed to discourage classification by requiring in each instance of classification:

- a meaningful written justification by the initiator of the classification action; and

- a time limit on the classification, as short as possible, which could be extended with detailed justification.

Question: Are there key points in the research, development, production and deployment cycle at which information should be controlled? That is, should we adopt the policy that all DoD research be unclassified and freely available and therefore impose controls only on information pertaining to specific pieces of hardware? One point which should be carefully considered here is the additional lead time that will be available to a potential enemy if he obtains knowledge of our significant research and technology activities and thus can predict its end use in a weapon system.

Response: The Task Force has weighed the detrimental effect of security controls on the conduct of R&D programs against the need to meet other national objectives and to avoid disclosures beneficial to potential enemies. It appears that little is to be gained by classifying basic research; it is noted that DoD policy and practices are already in virtually complete accord with this view. Similarly, it seems that, as a general rule, much of the early exploratory development could be kept unclassified. Exceptions should require formal documentation and formal approval by OSD; each approval of classification in this category should be accompanied by a rigid deadline for declassification.

For all other development work, including advanced exploratory development and advanced development, classification procedures similar to those employed today are suitable. The criteria should be sharpened, however, so that classification may be imposed only to preclude major technological advantages to potential enemies, to prevent disclosure of information of major importance in the development of countermeasures, or to support national policy directives and regulations. Within this framework, the classification of each system, component, subsystem or technique in advanced development should be considered individually on its own merits. Here, too, a rigid schedule for declassification should be imposed from the beginning.

Major programmatic changes in any category of classified R&D should be accompanied by reconsideration of the program's security classification. Particularly, when a system is operationally deployed, the large increase in known system technology and its diffusion among many people should be recognized, and classification should be revised accordingly, with major emphasis on preventing disclosure of system vulnerabilities and on forestalling the early development of specific countermeasures by potential enemies.

DISCUSSION OF PRIME FACTORS AND EFFECTS IN CLASSIFICATION

1. General Significance of Classification

Although the Task Force was composed of individuals whose backgrounds are in science and engineering, the group sought responses to its assignment from a broader viewpoint since it was felt quite strongly that the issue of classification and the way it is handled has a significant effect on the posture of our nation in the international community, particularly in relation to our ability to unite and strengthen the free nations of the world. To emphasize this point, one of the members quoted an opinion expressed by Niels Bohr soon after World War II that, while secrecy is an effective instrument in a closed society, it is much less effective in an open society in the long run; instead, the open society should recognize that openness is one of its strongest weapons, for it accelerates mutual understanding and reduces barriers to rapid development.

We believe that overclassification has contributed to the credibility gap that evidently exists between the government and an influential segment of the population. A democratic society requires knowledge of the facts in order to assess its government's actions. An orderly process of disclosure would contribute to informed discussions of issues.

When an otherwise open society attempts to use classification as a protective device, it may in the long run increase the difficulties of communications within its own structure so that commensurate gains are not obtained. Experience shows that, given time, a sophisticated, determined and unscrupulous adversary can usually penetrate the secrecy barriers of an open society. The Soviet Union very rapidly gained knowledge of our wartime work on nuclear weapons in spite of the very high level of classification assigned to it. The barriers are apt to be far more effective against restrained friends or against incompetents, and neither pose serious threats.

Beyond such general matters, the Task Force noted that there are frequent disclosures of classified information by public officials, the news media and quasi-technical journals. While the reliability and credibility of such information frequently may be in doubt, the magnitude of leaks indicates that, at present, our society has limited respect for current practices and laws relating to secrecy. It would be prudent

to modify the present system to one that can be both respected and enforced.

2. Some Major Areas in Which Classification Should Continue

The Task Force recognized that there are major areas in which classification is either traditional or expected. The Task Force did not attempt to reach unanimity on the extent to which such classification is necessary. The following are examples of such areas:

2.1 International Negotiations

There are many international negotiations in which discussions are facilitated by secrecy, even though the results may eventually be disclosed. Secrecy permits greater freedom of discussion at the conference table and the consideration of a much wider framework of new ideas and proposals than might otherwise be the case.

2.2 Plans for Hypothetical Emergencies

It is frequently advantageous to classify plans for assumed emergencies in order to limit their circulation. Such plans may include alarming contingencies that may never occur at all--or, at least, not be realized in the way assumed when the plans were developed.

2.3 Tactical and Operational Plans

There are many tactical and operational plans that would lose their effectiveness, or even be jeopardized, if they were not maintained secure for at least a limited period of time. For example, detailed plans for the disposition and operation of the Polaris fleet, or the state of readiness of combat groups prior to engagement may, for purposes of effectiveness, deserve to be classified for a specified period of time.

2.4 Intelligence Information

Information gained through intelligence channels often must be classified for a period of time in order to protect the sources of information, that would dry up if revealed. Nevertheless, intelligence that is critical to an understanding of our national posture should be disseminated as soon as possible, and in as much detail as feasible (consistent with not compromising our collection capability). Careful consideration should be given to the question: To what extent could

openness and international sharing of information gathered by physical observation improve our position?

2.5 Specific R&D Efforts

There may be a good reason for limiting disclosure of the magnitude and direction of our efforts in specific fields of research and development for a time, when plans for production are congealing, in order to maximize the advantages gained through lead time. In all such cases we must continue to recognize that the lead gained will be transitory unless each advance is followed by another.

2.6 Vulnerabilities

It appears essential to restrict information concerning major weaknesses of operational systems, particularly before remedies for those weaknesses are completed. At the same time, one must ensure that such restrictions do not result in the lack of recognition of the problem or in failure to remedy the situation.

3. General Classification Philosophy

Some members of the Task Force are inclined to the view that, as a nation, we would have more to gain in the long run by pursuing a policy of complete openness in all matters. For example, the Strategic Arms Limitation Talks (SALT) might be more realistic if they were accompanied by a full and open public disclosure of knowledge of weapons capabilities and state-of-the-art developments, preferably by both sides, but at least on our part--especially what we know about Soviet systems. In this way, the Congress and the general public would be better informed regarding the significance of the SALT discussions. Similarly, some members of the Task Force feel that public discussion of matters such as the SAFEGUARD system would be given a more realistic basis if intelligence information and analysis were made openly available, even if this meant disclosing information on certain collection techniques, providing these would not be jeopardized by open discussion.

Nevertheless, the Task Force eventually agreed that it would be very difficult to obtain broad acceptance of highly radical changes in classification at this time because of understandable conservatism and deeply ingrained attitudes. Such attitudes would make it difficult to alter significantly present laws and regulations. The most that can be hoped for in the short run is that the present system might be

overhauled extensively in order to make it more realistic, in which case it could be respected and enforced far more completely.

In spite of this area of agreement concerning the necessity for secrecy in limited cases, the Task Force emphasizes that there are very great disadvantages to extensive reliance on secrecy in our society.

4. Classification of Technical Information

With respect to technical information, it is understandable that our society would turn to secrecy in an attempt to optimize the advantage to national security that may be gained from new discoveries or innovations associated with science and engineering. However, it must be recognized, first, that certain kinds of technical information are easily discovered independently, or regenerated, once a reasonably sophisticated group decides it is worthwhile to do so. In spite of very elaborate and costly measures taken independently by the U. S. and the U. S. S. R. to preserve technical secrecy, neither the United Kingdom nor China was long delayed in developing hydrogen weapons. Also, classification of technical information impedes its flow within our own system, and, may easily do far more harm than good by stifling critical discussion and review or by engendering frustration. There are many cases in which the declassification of technical information within our system probably had a beneficial effect and its classification has had a deleterious one:

(1) The U. S. lead in microwave electronics and in computer technology was uniformly and greatly raised after the decision in 1946 to release the results of wartime research in these fields.

(2) Research and development on the peaceful uses of nuclear reactors accelerated remarkably within our country, as well as internationally, once a decision was made in the mid-1950s to declassify the field.

(3) It is highly questionable whether transistor technology would have developed as successfully as it has in the past 20 years had it not been the object of essentially open research.

As a result of considerations of this kind, the Task Force believes that much of research and exploratory development (essentially all of 6.1, most of 6.2 and some of 6.3) should generally be unclassified; at the same time, we realize that the greatest value of classification

rests in the preservation of designs and specialized techniques close to assembly and production and more akin to the technical arts.

In this connection one of the members emphasized that, to the extent that technical information should be safeguarded in behalf of national security, the greatest importance should be attached to what might be called proprietary technical information--information not unlike that relating to fabrication and production which industrial organizations attempt to preserve from competitors. Thus, significant advantages can be obtained in some areas of categories 6.4 and 6.6 by classification. Even here, however, it should be recognized that restrictions on the dissemination of such information may impede its exploitation within our national community at least as much as it impedes those foreign nations which would not scruple to attempt to obtain it through espionage.

5. Classification Criteria and Limitations

It is the considered opinion of the Task Force that past procedures--according to which classification rested largely on the desire to withhold information from other nations--should be modified to give greater consideration to the effects of classification on our own progress. It should be emphasized that a strong voice, that of the U.S. Congress, is primarily influenced by the requirement to withhold information from others. The effects of classification on our own progress will have to be carefully discussed. We believe that scientific and engineering information, short of detailed blueprints and critical techniques relevant to production, should be classified only after having been justified by very special reasons. At the time of classification, a date should be specified after which the classification would be removed. This period should be as short as possible, and an extension should be granted only when fully justified.

At present, a major proportion of technical information classified Top Secret is subject to a declassification pattern designated as 3-3-6, whereby they are downgraded to Secret in three years and to Confidential in another three, and made open after an additional six years. We believe that, for most technical items, this is much too long.

The Task Force was inclined to the view that the classification category of "Confidential," as applied at present to research and development not bearing immediately on field problems of military interest, is probably useless, or even detrimental, for it prevents normal diffusion of information without providing a really effective barrier to leaks. It probably would be much more realistic to confine

this category of classification to matters bearing on military plans and readiness.

For somewhat different reasons, it appeared to the Task Force that the category of "Special Access," as applied to areas of research and technology, should be carefully monitored to avoid unduly limiting the number of competent technical minds that provide innovative contributions in the area. In the one case examined (Eighth Card), the Task Force believes that Special Access should never have been applied. In circumstances such as those that prevailed during World War II, when most of the best scientists and engineers were engaged in classified defense research, on a full-time basis, it may be feasible to bring to bear a suitably diverse spectrum of minds and talents even on those areas designated "Special Access." But this would be exceedingly difficult under present-day conditions when so many competent technologists are associated, if at all, only peripherally to military research and development. The more open the areas of investigation, the more dynamic will be our national approach to the exploratory phases of research and development.

6. Other Observations

As a result of limitations on time and staff, the Task Force could not explore all facets of the field of classification. It did, however, attempt to gain an understanding of the way in which classification procedures work at the detailed level in a few cases. The following observations may be made:

(1) Although there are many alert and imaginative professional experts engaged in assigning and administering classification, as long as the classified material remains so voluminous it is obvious that routine procedure can become too burdensome. There is also a quite understandable bureaucratic tendency to overclassify and to continue classification too long. If the amount of classified material could be reduced to, say, 10 percent of its present volume, a much more thoughtful and effective control could be established across the board.

(2) It was noted that the laboratories in which highly classified work is carried out have been encountering more and more difficulty in recruiting the most brilliant and capable minds. One member of the Task Force made the pessimistic prediction that, if present trends continue for another decade, our national effort in weapons research will become little better than mediocre. In classified work, the increasing isolation and limited accountability to one's scientific peers contribute to this degradation. In addition, it is worth

noting that the many scientists and engineers in academic circles who are willing to work on problems related to national defense would find it somewhat easier to do so in the environment which prevails at present if the classified areas were reduced greatly, as the Task Force believes should be the case.

(3) The Task Force emphasizes that modifications in the pattern of classification alone will not be a panacea for the difficulties the Defense establishment faces.