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CLASSIFICATION MANAGEMENT TRAINING AND OPERATIONS

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CLASSIFICATION MANAGEMENT TRAINING AND OPERATIONS

An Approach

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Classification Management is a tool of Management; if classification management is to be good, the original classification must be good. As this is the heart of the program a brief review of the status of classification authority and operations may be useful.

CLASSIFICATION AUTHORITY

The authority to classify is, of course, inherent in the Constitution's provision for the common defense. More practically, for our everyday use, it stems from Executive Order 10501, as amended, which says in part:

"Section 2. Limitation of Authority to Classify The authority to classify defense information or material under this order shall be limited in the departments and agencies of the executive branch as hereinafter specified. . . .

(c) In those departments and agencies not affected by the provisions of subsection (a) and (b), above, the authority for original classification of information or material under this order shall be exercised only by responsible officers or employees, who shall be specifically designated for this purpose. Heads of such departments and agencies shall limit the delegation of authority to classify as severely as is consistent with the orderly and expeditious transaction of government business . . ."

In consonance with the requirement for delegation, each of the services has issued directives, specifying who may exercise original classification authority, and limiting it in relation to successively higher levels of classification¹. There is no purpose in our repeating the detailed list of those who are so designated, but it may be useful to mention, in capsule form, the original authority for Top Secret classification. In each of the services and DoD these authorities are the Secretary and his principal assistants and staff, the Chairman of the JCS and his principal staff, and the Military Chiefs of Service and their deputies and heads of principal staff offices, and the Commanders of major operating forces and major field establishments. As specified, the authority may not be redelegated. In this connection, the phrasing of delegation in the Navy appears more extensive than in either of the other services; the Army appears most limited.

On the basis of numbers of people authorized to exercise original authority for Top Secret classification, the Air Force is the most liberal of the services. This is an essentially current list for the respective services and DoD:

Footnotes appear at the end of the text.

TABLE 1²
Numbers of Positions Authorized to Classify Top Secret

OSD	20
JCS	40
Defense Agencies	226
Dept of Army	79
Dept of Navy	198
Dept of Air Force	240
Total	803

The total numbers of people authorized to exercise original classifying authority at the other classification levels are:

Secret	7,687
Confidential	31,048

Derivative classification, about which more will be said later, stems from the further use of material that has been classified by an *original* authority. A person who uses such material in other ways or in other documents is exercising *derivative* authority. Such authority includes, of course, the use of guides in different fields announcing determinations made by higher authorities.

Mention must be made of the level next higher than the Secretary of Defense, namely, the Office of the President — specifically with respect to the National Security Council. The issuances of this office have a determining effect on classification when they enter the DoD in one way or another.

This, then, is the framework within which classification is created; there is ample opportunity for variations of interpretation, as one might suspect.

Classification is changed in a manner that parallels its creation; namely, any authority authorized to create can reduce or eliminate, and any authority in a higher chain can take such action with respect to issuances from subordinate offices. Of course, this requires thought, consideration, and deliberate action — all at a premium in a busy environment. To help, the Automatic, Time-Phased, Downgrading and Declassification Program was, as we all know, created;³ it is in use by the services and their agencies and contractors. The program has been of major importance in keeping the amount of classified material within reasonable bounds. There are difficulties in its operation; I shall refer to them later. Some have been discussed at this meeting.

Another medium that has begun more recently to have an effect on changes, in addition to its effect on classification, is the classification guide, now operating as part of the

Classification Management Program. A brief summary of the effect of the Classification Management program on the issuance of such guides may be inferred from Table 2.

TABLE II⁴
Classification Guides

Dept	No. of Guides 30 Jun 63	No. of Guides 30 Jun 64	No. of Guides January 1971
Navy	17	22	130
Air Force	116	153	270

As we can see, there has been a steady improvement in the availability of guides and, in general, their quality as well.

WHAT'S CLASSIFIED -- Some Comments

Having determined *who* is authorized to classify and change or declassify, we now approach the question of *what* to classify. To rephrase the opening statement, good Classification Management depends on good classification.

Many comments have been made about the process of classification and the selection of material to classify. The basis, of course, is in EO 10501, which establishes the degrees of classification. About Top Secret, for instance, the document says:

"...The Top Secret classification shall be applied only to that information or material the defense aspect of which is paramount and the unauthorized disclosure of which could result in exceptionally grave damage to the Nation such as leading to a definite break in diplomatic relations affecting the defense of the United States, an armed attack against the United States or its allies, a war, or the compromise of military or defense plans, or intelligence operations, or scientific or technological developments vital to the national defense."

As we know, the specifications for other categories are distinguished by changes in the value words concerning the potential effects of compromise. The problem is to determine whether compromise or loss could cause "exceptionally grave," or "serious," (Secret), damage or be "prejudicial" to the defense interests of the nation (Confidential); this problem faces all who serve as original classifying authorities or prepare classification guides.

To help in interpretation, DoD has issued "Writing and Applying Classification Guidance,"⁵ and some of the service components have issued similar instructions, based upon the original, amplifying to fit their circumstances. In this area, a few additional words may be of some value. In assessments leading to a determination of classification, the *potential* of a given

friend or possible foe can be based on a few relatively easy-to-discover facts, since information about raw materials, people, and other basic resources is generally available. The *capability* of a nation, based on its potential, becomes a more sophisticated element of information; some aspects are determinable with relative ease (e.g., the amount of *arable* land required to support given population under normal circumstances), other aspects only with great difficulty, if at all. In these days of advanced technology, a nation depends heavily on an industrial base that can regularly turn out uniform products of complex design. Assessing the extent and quality of the industrial base becomes a vast puzzle, pieces of which come to hand from time to time, and lead to such judgments as "the Soviet Union is approximately 5 years behind the U.S. in computer technology." The task of arriving at this judgment is essentially one of scientific and technical intelligence. The results may be classified or unclassified (as in the computer assessment) but *evaluations* of their application in military fields and comparisons of capabilities are generally classified.

Let us turn to the most difficult-to-determine aspect of information. Having established the capabilities or the range of capabilities, we must now consider intent. There is little question that if we can establish the intentions of a possible adversary, we have gained much. We may have been able to establish that a capability to do so-and-so exists, but the pinch is in deciding whether there is an intention to do it. The most obvious encounter with intent is in plans: war plans, contingency plans, development plans, etc.

As an illustration, the commander of a force in the field can develop a fairly accurate picture of the force he faces. Intelligence may establish that the enemy has troops and aircraft, so positioned as to be *capable* of reinforcing other forces within a stated time; knowing whether they actually *intend* to employ the force in such a manner can make a significant difference to the commander when he assesses the likely outcome of his plans.

It is interesting to note that of eight considerations to assist in initial classification determinations found in DoD 5120.34H⁶, four may be said to address themselves to intentions, three to capabilities, and one to time. Intent, therefore, is most critical: it must be assessed carefully. Concealing intent is particularly difficult in a country such as the United States: for one valid reason, the President may decide to reveal intent in order to further national policy. For another, intent must be related to capability; there is intense coverage of the area of capabilities in a plethora of trade magazines and papers. The difficulty and importance of evaluating intent and its relation to capabilities is emphasized a number of times in a supplemental statement to the Report of the Blue Ribbon Defense Panel, which said, at one point:

"It is imprudent, indeed even reckless, to formulate such policies (national defense policies) on the basis of subjective judgments as to Soviet and Red Chinese intentions rather than their known military and technological capabilities."⁷

Consequently, whether intent is revealed in information must be weighed and probably will be

classified unless the classifier has positive knowledge that higher authority has authorized disclosure or release.

WHO CLASSIFIES -- 2 basic approaches

Having discussed some aspects of *what's* classified, let us return to the question of *who* does the classifying. We have discussed the officials who are authorized to create classification in the first instance and have noted the part played by derivative classification. The framework seems reasonably clear-cut and straightforward. Surely, the effort should advance with little difficulty. Should there be problems?

The Author -- A primary means of establishing classification -- probably the most common -- is to have the author decide. It is also probable that the author is not an original classifying authority. He may or may not be authorized to issue the paper he creates in his own name or in the name of his superior (who may be an original classifying authority). If the author does not literally sign the paper, but an original classifying authority does, that official is presumably exercising his classification prerogatives and confirming the classification, as is required of him by existing directives. Since hundreds of thousands of pages are created each year, it appears only reasonable that the author would have primary responsibility in establishing the classification: he should be best informed on the topic, and the wheels must keep turning. If, however, he does sign and is not an original classifying authority, on what basis does he establish the classification? Derivative authority? Issued guides (a form of derivative authority)? Personal expertise? Following the prescribed path of finding an original authority?

Derivative classification is the most eligible peg on which to hang classification. In this respect, two basic problems have adverse effects on good classification. The first is an assessment of whether information drawn from an existing classified paper is classified. A foundation for derivative classification can be inferred from Section 3 of EO 10501 subparagraphs (a) and (b), primarily; these state in part:

"(a) ... Documents shall be classified according to their own content and not necessarily according to their relationship to other documents ...

"(b) ... Documents separated from the file or group shall be handled in accordance with their individual defense classification."

In implementation of the concept, one finds for DoD:

"1. Derivative classification is involved when -

a. An item of information or collection ... is the same as ... other information with respect to which there is an outstanding proper classification determination ... ; or,

The information is created as a result of ... other information ... which has been and still is properly classified; or, ...

2. c. in connection with all operations where derivative classification of a document ... occurs, definite procedures shall be established by appropriate authority so that, ... the necessity, currency and accuracy of each derivative classification will be reviewed ... "

Note the emphasis on "proper," "current," and "accurate." However, in the next paragraph we find:

3. In those situations involving the copying or extracting of classified information ... the individual ... shall be responsible for assuring that the new document or copy bears the same classification as that assigned to the information ... from which ... prepared ... "8

The Navy, in issuing the above instructions⁹ added to paragraph 3:

"3. ... copying or extracting of classified information *clearly identified* ... "(emphasis supplied)

Neither the Army nor the Air Force directly included that paragraph in their versions¹⁰ but all services included the substance of the definition of derivative classification.

There is an additional aspect, one that often escapes recognition in the area of exercising derivative classification; namely, when does derivative classification end and original classification begin? As stated above, EO 10501 implies a foundation but does not cover "derivative" classification directly. In addition to Section 3, quoted above, related material appears in Section 4.b.:

"(b) *Non-Automatic Changes* ... The downgrading or declassification of extracts from or paraphrases of classified documents shall also require the consent of the appropriate classifying authority unless the agency making such extracts knows positively that they warrant a classification lower than that of the document from which extracted, or that they are not classified."

The basic DoD instruction¹¹ in defining original classification includes:

"b. An accumulation or aggregation of items of information, regardless of the classification ... collectively requires a separate and distinct classification determination."

The Army in its directive¹² says:

"d. Original classification, ... or a compilation of information requires a classification based on the sensitivity of the combined information ... "

The Navy in its version¹³ included the DoD instruction verbatim; the Air Force¹⁴ restates and adds:

"b. An accumulation or compilation of items of information, regardless of classification or lack thereof, requires a new or different degree of protection.

c. A currently classified item of information requires a different degree of protection or the removal of such protection . . . and the action taken is not in response to classification guidance from a higher echelon."

The purpose of the extensive cross-referencing and citation above was to establish the complexity of the framework within which a decision must be made. It also leads to the second basic problem in use of derivative authority. The individual author, despite his competence in his field, may find it difficult to determine:

- o Whether there are issued classification guides on the topic or combination; and, if not,

- o Whether the information he is presenting reflects determinations on classification previously made by "competent authority" and still current; but, if so,

- o Whether the information represents a combination, elements of which were previously classified by competent authority but the combination of which is new.

In essence, the likelihood that the army of individual authors can be adequately informed in this field is quite small. Further, under these circumstances and the press of time, there is little question that "original" classification at all levels is being performed regularly by those who are not explicitly authorized to do so.

Central Office — The second of the two basic approaches to classification is to have it done by a "central office," rather than by the author. Here, a "central office" does not necessarily visualize a large group; it does mean one that exercises the authority for classification and classification management and is not responsible for any other major functions (and not many minor ones, either). A number of points concerning this concept undoubtedly come to the mind of each of you. The points against such a concept probably can be reduced to three:

- o Nobody knows that much
- o Papers would never get out
- o It would be too expensive

Before examining the matter, we should confess that our Group decided to go this route. Therefore, the reader should be aware of some probable bias in the direction of this solution.

The difficulties that face an author can be easily recognized as being different from those of a centralized source of classification determination. At any given time there is an existing

milieu only portions of which are changing. This is not to say that there are not many changes but rather that if one has a fix on the setting one can perceive and absorb such changes more easily.

Illustratively, until about 1969, the fact that the basis for general-purpose force planning as set forth in the Joint Strategic Objectives Plan (JSOP) -- 2 major contingencies and 1 minor, to be met simultaneously -- had been classified for many years. As an existing part of the picture, one knew, without looking it up, that any information revealing that this was the case would be classified. After the decision to make the information public, that part of the picture changed: now information that does nothing more than reveal the announced basis -- currently, 1 major contingency and 1 minor -- for general-force planning is unclassified and publicly released. In essence, such a "set" establishes a small alarm that activates if one encounters information that goes beyond the limit in some way.

Similarly, the announced 4 1/3 division troop strength in current support of NATO is an announced fact and part of a picture that does not change quickly -- one would recognize with relative ease information that went beyond those limits.

Hence, the problem that faces the army of authors -- of whether there is a "guide" is much simpler for a squad of classification managers.

The next difficulty that faces an author is whether the information:

"... is in substance the same as or closely related to other information with respect to which there is an outstanding proper classification determination of which the derivative classifier has knowledge ..."¹⁵

Some key words here are "in substance," "proper classification," and "has knowledge." If the question is specifically technical and in the author's field, the judgment can probably be made effectively. I submit that few of the determinations fit so neatly.

As an example of the difficulty, one may cite the most recent "Posture Statement"¹⁶ of the Secretary of Defense. Of the 258 pages in the Secret version, only 57 pages contain classified information. The remainder appear verbatim in the publicly released version. Even on the 57 pages, a major fraction of the text is the same as in the unclassified version (not necessarily true of some tables and figures), and only a few elements of information are changed; the Secret version (which is not paragraph- or page-classified) surely represents classification by one of the top-level original authorities, and much "substance" can be derived that appears to require a Secret classification based on a "proper classification" by an obviously authorized person. In this case, the "has knowledge" problem of the author can be assumed to be easily resolved, but the comparative knowledge may be a different question.

A related aspect of this problem for the individual author is the "proper" part of "proper

classification." *Proper* in the context cited, must also mean *authorized*, since a classification can be considered proper only if it has been performed by someone granted the authority.

In Table I we established that the number formally reported as authorized to make original determinations at the Secret level is 7,687. It might be difficult to learn whether the information at hand was originally classified by one of this number. In fact, the difficulty of finding out would essentially preclude trying to learn, except in the most important and pressing cases.

Concerning this part of the problem, the "central office" is in a much better situation than the individual author. The "in substance" portion is a part of the whole picture that has been constructed -- as is the "has knowledge" portion -- simply because of the need for a conscious effort to make certain that everything available has been collected. In the case of "proper classification," too, the central office is in a better position to determine whether the substance of the information fits well with current guidance at a given level and who is likely to be authorized to issue guidance in the topical field under consideration. In this connection, it seems reasonable to say that the NCMS and the Classification Management program have provided a better network to obtain such information than has ever existed. It might, however, be almost as time-consuming for a central office to learn about any given one of the 7,687 persons/positions as for the individual author -- but rarely would this be necessary.

The last of the problems facing the individual author who is exercising derivative authority, is that of assessing the line-crossing combination effects, namely, whether he is, in fact, making an "original" determination. An author is concerned mainly with the content of his paper. He can have only a secondary concern, at best, about the nuances of effects on classification and about whether he is making an original determination and has authority to do it. In fact, even the level of classification all too often comes off poorly for the same reason. Regrettably, one still encounters problem-creating classifications, such as a one paragraph memo establishing as Secret the fact that a service Secretary wanted to be briefed on a particular day on the results of a study, the subject of which was unclassified; and a similarly brief piece issued by a military chief establishing as Top Secret the fact that a given well-known problem needed to be re-examined.

Having established some of the ways in which difficulties faced by the army of authors are greater than the same difficulties faced by a squad of classification managers, we look at the three points raised against the concept of central determination of classification.

The first -- "nobody knows that much" -- has been discussed indirectly in the discussion of the difficulties faced by an author. Stated more directly, there is at least room for argument that a small central group *can* know a great deal, because accumulating the information on which to base determinations results in a body of knowledge. More, it also leads to *who* has knowledge and the combination here is especially valuable. I am not suggesting, of course, that one person

is likely to be, at the same time, a microwave specialist, a nuclear physicist, an acoustical expert, a naval strategist, a military tactician, and a chemical wizard, to mention a few. However, I am suggesting that the amount of knowledge necessary to cover security classification competently in a variety of fields can be acquired.

The second problem is really a question of timeliness. Given that a central office can accumulate the necessary information, how long would it take to push paper through the process of classification paragraph by paragraph? Here, as one would suspect, cases may differ; still, we can talk about some general figures.

Two of us provide classification management for our Group. The Group is relatively small, having approximately 350 staff members on the "paper creating" side. The Group, however, has a large paper output, and a large document collection to provide the necessary information base. Recently, as part of our overall program, we examined a block of the collection for currency of classification. Of approximately 3500 titles considered, we selected 357 items for examination. The selecting was based on knowledge of subjects for which changed guidance existed. We were able to change the classifications of 209 of these 357 items; we also found that a number of others would be eligible for classification change at an earlier date than had been originally established. We did the job in a month. During the same time, we considered and established classifications for newly created material. At the time, the number of items produced each day was only a little over 3, although the normal is about twice that figure. These new items, of course, took priority.

At our Group, items range in size from 1 page to several hundred; commonly they run between 12 and 30 pages. Other tasks not covered in the counting process include review of some incoming material for downgrading group determinations, advice to members of the staff on what information one can use at the unclassified level, auditing of selected accountability records, and study -- about which we shall have more to say.

The last of the objections raised to centralized classification concerns cost. This area certainly is the spongiest; little can be said precisely or with unchallengeable figures. People constitute the main expense. To some extent, the discussion of timeliness has covered cost, because of the relation of output to people. What we have not covered is the time (and, therefore, cost) saved the authors, who can be assumed to be relatively high-cost people. Nor is there yet an agreed-upon set of figures for the amounts saved (or avoided) by reduction of the level of classification or the creation of a paper at a lower level of classification or unclassified. These questions do not, of course, even touch on the value to be accorded proper classification -- the reason for the whole game.

There is an inherent advantage in the existence of a group of "central offices." In part, some advantage has already accrued as a result of the existence of this Society, some because of the classification management program. I hope that the trend will continue because in it there is

potential for far better classification. It is well to remember that EO 10501, in Section 4, establishes the requirement:

"... Heads of departments or agencies originating classified information or material shall designate persons to be responsible for continuing review of such classified information or material on a document-by-document, category, project, program, or other systematic basis, for the purpose of declassifying or downgrading whenever national defense considerations permit, ..."

This aspect, too, can be better served by a group of central offices, since, as we have seen, classification is a continuum, and continuity and interchange of information among such offices can promote a more effective program.

QUALITIES OF A CLASSIFICATION ANALYST

Assuming, for purposes of further discussion, that a central classification office is to exist, who should be in it and what training is necessary? It may be said that there is *not* just one set of criteria; rather, there is a spectrum of possibilities.

Background – There is little doubt that, since the frame of reference is national security and defense, a background in defense matters is very important. Service in one of the Armed Forces for some reasonable period of time, especially in positions that required an understanding of the employment of the force and its interrelationships with other armed forces, is very desirable. Lacking such experience, the person would, at the very least, have to have considerable interest in these matters. Certainly, even with experience, one is likely to have to learn a great deal. As well, the desirability of a background in technical or scientific work is clear. The particular field or fields (if one is so fortunate) is not specifically important, unless the information area to be covered is sharply circumscribed. If not actually experienced in matters technical and scientific, the person must at least have strong interests in the direction.

Interest is a critical factor and the emphasis is not misplaced. To return to the first objection postulated to the concept of a central office (Nobody knows that much) and to the discussion of the point, it *is* true that any person entering such an office will have to be oriented toward continued learning. It is true also that learning is not everybody's dish of tea. Care must be exercised to make the point quite clear.

Training – When one then enters into a "central office" type of organization, there is bound to be a period of training – mostly on-the-job or self-training. Naturally, the particular program for a given individual will be related directly to his particular background; thus, it is unlikely that two programs would be identical. Similarly, the particular organization is likely to have areas of emphasis; these provide a topical guide to the study effort. In any event, some general elements to be included can be stated:

- o General handbooks on military operations of all services, with emphasis, as

appropriate, on the principal service association -- both classified and unclassified items.

- o Documents and books concerned with the basic principles that underlie hardware development (e.g. *Physics of Sound in the Sea*,¹⁷ and *The Effects of Nuclear Weapons*,¹⁸ electromagnetic theory books and documents, etc.).

- o Intelligence documents.

The study phase will probably take several months for a reasonable feeling of comfort in a small number of fields; actually, study is a continuing requirement. It should be interspersed with discussions, inside the classification management group on aspects related to classification, and with other members of the staff on technical aspects of the work.

Concurrently, the training should include examination of material both well classified and poorly classified. Beginning about the second month, and proceeding concurrently with study and the examination of examples of classified material, some practice on classification of new material should be undertaken. Such practice forms the base for applying information already gained and determining whether the study phase has covered the area adequately, as well as discussion and further guidance.

Subsequently, with experience and confidence, the trainee would actually classify material under the guidance of an experienced analyst. As training proceeds the emphasis should shift to having the trainee bring up points on which there is some uncertainty. After eight months to a year, the individual will probably be able to operate independently.

Continuing Operations -- Some comments are necessary. Of prime importance is the necessity to recognize that a reasonable amount of time must be available for continuing review and study -- perhaps a third of the total time -- for both studying related material and seeking out new information. It may be thought that one may expect to acquire new information by requesting it on a continuing basis. Experience has shown, however, that the process is rarely foolproof.

An important source of both guidance and information about classification is to be found in Congressional hearings, principally (but not exclusively) related to the DoD. These should be studied for application in the determination of classification.

As mentioned earlier, another important source of information is official statements, especially the "Posture Statement" of the Secretary of Defense, to which I have referred previously, as well as other members of the DoD and the Services. Again, these have to be examined in detail, from the point of view of both what they include and what they omit.

Active steps must also be taken to study newly issued classification guides. Guidance may have to be provided operating members of the organization. In a related area, documentary

issuances of other organizations should be examined, for currency in various fields, both for the information content and for the classifications applied.

Last, we should discuss matters with technical people from time to time - both for better understanding of the technical aspects of a problem (how *does* side-lobe detection compare with main-lobe detection) and for the aspects of information that are to be considered sensitive (what *isn't* known about OTH) and why.

SUMMARY

The purpose of this paper was to present an approach to classification management training and operations. It is surely not earth-shaking, revolutionary, or visionary. Of necessity, it has dealt far more extensively with "where it's at" than with details of how to select and train. However, in the view of the author, the "where it's at" and "how it is" is critical to approaching the goal of better classification management through better classification. As is evident to those in the field, the recommendations for central office determinations contain technical questions of propriety. These do not seem insoluble. More to the point, they are not technically worse than "how it is" now - and probably better. The paper is commended to your further consideration.

NOTES

- ¹ DoD Instruction 5510.47, *Safeguarding Classified Official Information*, 2 June 1964.
Department of the Army, AR 380-5, *Safeguarding Defense Information*, March 1969.
Department of the Navy, OpNav Instruction 5510.1, *Security Manual for Classified Information*, 12 May 1969.
Department of the Air Force, AFR 205-1, *Safeguarding Classified Information*, 2 January 1968.
- ² Information furnished by the Office of the Assistant Secretary of Defense (Administration) in May 1971.
- ³ DoD Directive 5200.10, *Downgrading and Declassification of Classified Defense Information*, 26 July 1962. Implemented in the services by AR 380-6 (Army), OpNavInst 5500.40 (Navy), and AFR 205-2 (Air Force).
- ⁴ Department of the Navy, NavPubInst 5215.41, *Navy Directives System Consolidated Subject Index of Unclassified Instructions*, of 30 June 1963 and 1964;
Department of the Navy, NavPubInst 5215.51, *Navy Directives System Consolidated Subject Index of Confidential Instructions*, of 30 June 1963 and 1964;
Department of the Navy, Office of the Chief of Naval Operations, Confidential Letter, Serial 010023P92, Subj: Index of Department of the Navy Security Classification Guides; forwarding of, 1 February 1971;
Department of the Air Force, AFSC/AFLC, *Security Classification Guide*, of 1 July 1963 and 1964, and 1 January 1971.
The figures in Table II are not exhaustive (e.g., DD 254's are not included). They represent the best comparative source however. A similar compilation for the Department of the Army was not available.
- ⁵ Directorate for Security Policy, Office of the Assistant Secretary of Defense (Administration), DoD 5120.34 - H, *Writing and Applying Classification Guidance*, 1 July 1968.
- ⁶ *ibid.*, Chart 1, pp. 3-5.
- ⁷ Supplemental Statement to Report of the Blue Ribbon Defense Panel, *The Shifting Balance of Military Power*, submitted to the President and the Secretary of Defense on 30 September 1970, pp. 2-3. Reprinted as Appendix 9, *Naval Nuclear Propulsion Program-1971*, Hearing before the Joint Committee on Atomic Energy, Congress of the United States, 92d, 1st Session, March 1971.
- ⁸ *opcit.*, DoD Inst 5510.47, pp. 12-13.
- ⁹ *opcit.*, OpNavInst 5510.1, p. 4-9.
- ¹⁰ *opcit.*, AR 380-5 and AFR 205-1.
- ¹¹ *opcit.*, DoD Inst 5510.47, p. 10.
- ¹² *opcit.*, AR 380-5, p. 2-4.
- ¹³ *opcit.*, OpNavInst 5510.1, p. 4-7.
- ¹⁴ *opcit.*, AFR 205-1, p. 22.
- ¹⁵ *opcit.*, DoD Inst 5510.47, p. 12.
- ¹⁶ Statement of the Secretary of Defense Melvin B. Laird on the Fiscal Year 1972-76 Defense Program and the 1972 Defense Budget, before the House Armed Services Committee, 9 March 1971.
- ¹⁷ Summary Technical Report, National Defense Research Committee, Office of Scientific Research & Development, Division 6, Volume 8, Washington, D.C., 1946.
- ¹⁸ Samuel Glasstone, Editor, published by the Atomic Energy Commission, Washington, D.C., 1962 (Rev 1964).

List of CNA Professional Papers*

- PP 1
Brown, George F. and Lloyd, Richmond M., "Static Models of Bank Credit Expansion," 27 pp., 23 Sep 1969, (Published in the Journal of Financial and Quantitative Analysis, Jun 1971) AD 703 925
- PP 2
Lando, Mordechai E., "The Sex-Differential in Canadian Unemployment Data," 5 pp., 9 Jan 1970, AD 699 512
- PP 3
Brown, George F.; Corcoran, Timothy M. and Lloyd, Richmond M., "A Dynamic Inventory Model with Delivery Lag and Repair," 16 pp., 1 Aug 1969, AD 699 513
- PP 4
Kadane, Joseph B., "A Moment Problem for Order Statistics," 14 pp., 13 Jan 1970, (Published in the Annals of Mathematical Statistics, Apr 1971) AD 699 514
- PP 5
Kadane, Joseph B., "Optimal Whereabouts Search," 28 pp., Oct 1969, (Published in the Journal of the Operations Research Society of America, Vol. IX, 1971) AD 699 515
- PP 6 - Classified
- PP 7
Friedheim, Robert L., "The Continental Shelf Issue at the United Nations: A Quantitative Content Analysis," 25 pp., 7 Jan 1970, (To be published in "Pacem in Maribus," edited by Elaine H. Burnell and Piers von Simson, Center for the Study of Democratic Instructions) (See also PP 28) AD 699 516
- PP 8
Rose, Marshall and White, Alex, "A Comparison of the Importance of Economic Versus Non-Economic Factors Affecting the Residential Housing Market During the Two Decades Subsequent to World War II," 128 pp., 15 Jan 1970, AD 699 517
- PP 9
Rose, Marshall, "A Thesis Concerning the Existence of Excess Capacity at Naval Shipyards Prior to the Escalation of Hostilities in Southeast Asia in 1964," 67 pp., 9 Jan 1970, AD 699 518
- PP 10 - Classified
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O'Neill, David M., "The Effect of Discrimination on Earnings: Evidence from Military Test Score Results," 19 pp., 3 Feb 1970, (Published in the Journal of Human Resources, Summer 1970) AD 703 926
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Brown, George F. and Lloyd, Richmond M., "Dynamic Models of Bank Credit Expansion Under Certainty," 29 pp., 3 Feb 1970, AD 703 931
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Overholt, John L., "Analysis Data Inputs and Sensitivity Tests in War Games," 30 pp., Mar 1971, AD 722 855
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Rose, Marshall, "Determination of the Optimal Investment in End Products and Repair Resources," 38 pp., 18 Feb 1970, (Published in the Annual Meeting of the American Association of Cost Engineers Proceedings, Jun 1971, Montreal, Canada) AD 702 450

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CNA Professional Papers – Cont'd.

- PP 15
Rose, Marshall, "Computing the Expected-End Product Service Time Using Extreme Value Properties of Sampling Distribution," 29 pp., 18 Feb 1970, (Published in Operations Research, Mar-Apr 1971) AD 702 451
- PP 16
Rose Marshall, "Study of Repairable Item Re-supply Activities," 35 pp., 18 Feb 1970, AD 702 452
- PP 17
Brown, Lee (Lt., USN) and Rose, Marshall, "An Incremental Production for the End-Item Repair Process," 17 pp., 3 Mar 1970, (Published in Annual Conference of the American Institute of Industrial Engineers Transactions, May 1970, Cleveland, Ohio) AD 702 453
- PP 18
Rose, Marshall, "Inventory and the Theory of the Firm," 14 pp., 18 Feb 1970, AD 702 454
- PP 19
Rose, Marshall, "A Decomposed Network Computation for End-Product Repair Curves," 24 pp., 18 Feb 1970, AD 702 455
- PP 20
Brown, George F.; Corcoran, Timothy M. and Lloyd, Richmond M., "Inventory Models with a Type of Dependent Demand and Forecasting, with an Application to Repair," 4 pp., 10 Feb 1970, (Published in Management Science: Theory Section, Mar 1971) AD 702 456
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Silverman, Lester P., "Resource Allocation in a Sequential Flow Process," 21 pp., 5 Mar 1970, AD 702 457
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Gorlin, Jacques, "Israeli Reprisal Policy and the Limits of U.S. Influence," 27 pp., 23 Mar 1970, AD 703 534
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Rose, Marshall, "An Aircraft Rework Cost-Benefit Model," 13 pp., 12 Mar 1970, (Published in the 5th Annual DoD Cost Research Symposium Proceedings, Mar 1970) AD 702 514
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Lloyd, Richmond and Sutton, S. Scott, "An Application of Network Analysis to the Determination of Minimum Cost Aircraft Pipeline Factors," 51 pp., 31 Mar 1970, (Presented at NATO Conference on Problems in the Organization and Introduction of Large Logistic Support Systems, May 1970, Luxembourg) AD 703 536
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Saperstone, Stephen, "An Approach to Semi-Markov Processes," 38 pp., 23 Mar 1970, AD 703 537
- PP 26
Brown, George F. and Corcoran, Timothy M., "The Reliability of a Complex System with Spares, Repair, and Cannibalization," 45 pp., 23 Mar 1970, AD 703 538
- PP 27
Fain, Janice B.; Fain, William W.; Feldman, Leon and Simon, Susan, "Validation of Combat Models Against Historical Data," 18 pp., 14 Apr 1970, (Published in 9th Symposium of the National Gaming Council Proceedings, Apr 1970) AD 704 744
- PP 28
Friedheim, Robert L. and Kadane, Joseph B., "Quantitative Content Analysis of the United Nations Seabed Debates: Methodology and a Continental Shelf Case Study," 32 pp., 24 Mar 1970, (Published in International Organization, Vol. XXIV, No. 3, 1970) AD 703 539
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Saperstone, Stephen H., "Controllability of Linear Oscillatory Systems Using Positive Controls," 27 pp., Apr 1970, AD 704 745
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DeVany, Arthur S., "Time in the Budget of the Consumer," 51 pp., 27 Apr 1970, AD 704 747
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Overholt, John L., "Fitting Korean War Data by Statistical Method," 11 pp., 5 May 1970, (Presented at the 9th Symposium of the National Gaming Council, Apr 1970, Washington, D.C.) AD 705 349
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DeVany, Arthur S., "A Theory of Household Demand and Labor Supply," 23 pp., 5 May 1970, AD 705 350
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Kadane, Joseph B. and Fisher, Franklin M.*, "The Covariance Matrix of the Limited Information Estimator and the Identification Test: Comment," 6 pp., 14 May 1970, (To be published in *Econometrica*) AD 706 310
*Department of Economics, Massachusetts Institute of Technology
- PP 35
Lando, Mordechai E., "Full Employment and the New Economics--A Comment," 4 pp., 14 May 1970, (Published in the *Scottish Journal of Political Economy*, Vol. XVII, Feb 1969) AD 706 420
- PP 36
DeVany, Arthur S., "Time in the Budget of the Consumer: The Theory of Consumer Demand and Labor Supply Under a Time Constraint," 151 pp., 15 Jun 1970, AD 708 348
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Kadane, Joseph B., "Testing a Subset of the Over-identifying Restrictions," 7 pp., 19 Jun 1970, (To be published in *Econometrica*) AD 708 349
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Saperstone, Stephen H., "The Eigenvectors of a Real Symmetric Matrix are Asymptotically Stable for Some Differential Equation," 19 pp., Jul 1970, AD 708 502
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Hardy, W. C. and Blyth, T. S.*, "Quasi-Residuated Mappings and Baer Assemblies," 22 pp., 14 Jul 1970, (To be published by the Royal Society of Edinburgh)
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Silverman, Lester P. and Forst, Brian E., "Evaluating Changes in the Health Care Delivery System: An Application to Intensive Care Monitoring," 19 pp., Jul 1970, AD 710 631
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Forst, Brian E., "Estimating Utility Functions Using Preferences Revealed under Uncertainty," 13 pp., Jun 1971, (Presented at the 39th National Meeting of the Operations Research Society of America, 5 May 1971)
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Schick, Jack M., "Conflict and Integration in the Near East: Regionalism and the Study of Crises," 43 pp., Oct 1970, (Presented at the 66th Annual Meeting of the American Political Science Association, Sep 1970)
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Brown, George F. and Lloyd, Richmond M., "Fixed Shortage Costs and the Classical Inventory Model," 13 pp., Jul 1970, AD 713 057
- PP 46
Hardy, William C. and Blyth, T. S.*, "A Coordination of Lattices by One-Sided Baer Assemblies," 21 pp., Jul 1970, (To be published by the Royal Society of Edinburgh)
*Mathematical Institute, University of St. Andrew

CNA Professional Papers -- Cont'd.

PP 47

Silverman, Lester, P., "Resource Allocation in a Sequential Flow Process with an Application to the Naval Resupply System," 18 pp., Oct 1970, (Presented at the 11th American Meeting of the Institute of Management Sciences, Oct 1970; Presented at the 26th Meeting of the Military Operations Research Society, Nov 1970) AD 713 028

PP 48

Gray, Burton C., "Writeup for B34TCNA--A Step-Wise Multiple Regression Program," 15 pp., Oct 1970, AD 713 029

PP 49

Friedheim, Robert L., "International Organizations and the Uses of the Ocean," 88 pp., Oct 1970, (To be published in Volume of Essays on International Administration, Oxford University Press) AD 714 387

PP 50

Friedheim, Robert L. and Kadane, Joseph B., "The Politics of Ocean Science," 43 pp., Jun 1971

PP 51

Saperstone, Stephen H., "Global Controllability of Linear Systems with Positive Controls," 29 pp., Nov 1970, AD 714 650

PP 52

Forst, Brian E., "A Decision-Theoretic Approach to Medical Diagnosis and Treatment," 14 pp., Nov 1970, (Presented at the Fall 1970 11th American Meeting of the Institute of Management Sciences, Oct 1970, Los Angeles, California) AD 714 651

PP 53

Kadane, Joseph B., "On Division of the Question," 12 pp., Nov 1970, (Published in Public Choice, Fall 1971) AD 714 652

PP 54

Kadane, Joseph B., "How to Burgle If You Must: A Decision Problem," 13 pp., May 1971

PP 55

Brown, George F., "Optimal Management of Bank Reserves," 35 pp., Aug 1970, AD 715 569

PP 56

Horowitz, Stanley A., "Economic Principles of Liability and Financial Responsibility for Oil Pollution," 26 pp., Mar 1971, AD 722 376

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Lando, Mordechai E., "A Comparison of the Military and Civilian Health Systems," 20 pp., Dec 1970, AD 716 897

PP 58

Kadane, Joseph B., "Chronological Ordering of Archeological Deposits by the Minimum Path Length Method," 16 pp., Jun 1971

PP 59

Dyckman, Zachary Y., "An Analysis of Negro Employment in the Building Trades," 309 pp., Jan 1971

PP 60

Lando, Mordechai E., "Health Services in the All Volunteer Armed Force," 33 pp., Jan 1971, (Published in Studies Prepared for the President's Commission on an All-Volunteer Force, Government Printing Office, Nov 1970) AD 716 899

PP 61

Robinson, Jack, "Classification Management Training and Operations, An Approach," 14 pp., Jul 1971, (Presented at the 7th Annual Seminar, National Classification Management Society, Washington, D.C., 13-16 Jul 1971)

PP 62

Brown, George F. and Schwartz, Arnold N., "The Cost of Squadron Operation: A Theoretical and Empirical Investigation," 10 pp., Jan 1971 (Published in the Transactions of the 1971 American Association of Cost Engineers International Meeting, Jun 1971) AD 722 377

PP 63

Lockman, Robert F., "Analyses of Selection and Performance Measures for CNA Support Personnel," 45 pp., Feb 1971, AD 720 360

PP 64

Utgoff, Victor A. and Kashyap, R. L.*, "On Behavior Strategy Solutions in Two-Person Zero-Sum Finite Extended Games with Imperfect Information," 37 pp., Feb 1971, (Accepted for publication in the SIAM Journal on Applied Mathematics) AD 720 361

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PP 65

O'Neill, David M.; Gray, Burton C. and Horowitz, Stanley, "Educational Equality and Expenditure Equalization Orders: The Case of Hobson V. Hansen," 43 pp., Feb 1971, AD 720 362

PP 66

Schwartz, Arnold N.; Sheler, James A. (LCdr) and Cooper, Carl R. (Cdr), "Dynamic Programming Approach to the Optimization of Naval Aircraft Rework and Replacement Policies," 39 pp., Mar 1971, (To be published in the Naval Research Logistics Quarterly) AD 720 363

PP 67

Kuzmack, Richard A., "Measures of the Potential Loss from Oil Pollution," 16 pp., Mar 1971, (Published as Chapter 13 in Legal, Economic, and Technical Aspects of Liability and Financial Responsibility as Related to Oil Pollution, The George Washington University, Dec 1970) AD 722 378

PP 68

Sluchman, Barry M. and Holt, James, T., "Cost/Effectiveness Analysis of Foreign Policy Alternatives: Need, Approach, and Prospects," 41 pp., Mar 1971, (Presented at the 1971 Western Regional Meeting of the International Studies Association, Mar 1971) AD 722 379

PP 69

Rogers, Warren F. (Cdr), "Exact Null Distributions of Rank Test Statistics," 47 pp., Mar 1971, AD 722 380

PP 70

Rogers, Warren F. (Cdr), "On A Theorem of Weyl," 17 pp., Mar 1971, AD 722 381

PP 71

Lloyd, Richmond M., "Dynamic Programming Models of Short Term Bank Reserve Management," 233 pp., Mar 1971

PP 72

Kadane, Joseph B. and Iversen, Gudmund R.*, "Estimation of Multinomial Process When Only the Sum and the Number Governed by Each Process is Observed," 13 pp., Apr 1971, AD 722 382

*University of Michigan

PP 73

Victor A. Utgoff and Kashyap, R. L.*, "On Behavior Strategy Solutions in Two-Person Zero-Sum Finite Extended Games with Imperfect Information, Part II: Determination of a Minimally Complex Behavior Strategy Solution in a Medical Decision Process," 22 pp., May 1971, (Accept for publication in the SIAM Journal on Applied Mathematics) AD 723 851

*School of Electrical Engineering, Purdue University

PP 74

Brown, Jr. George F.; Silverman, Lester P. and Perlman, Bernard L. (AWF3), "Optimal Positioning of Inventory Stock in a Multi-Echelon System," 37 pp., May 1971, (Presented at the 39th Annual Meeting of the Operations Research Society of America, May 1971) AD 723 852