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FILE NO.	SUBJECT		
	Military Cryptologic Career Plan		

TO	FROM	DATE 11 Feb 55	COMMENT NO. 1
DISTRIBUTION	DCS/O	Stratton/60242/bw	

1. A Technical Management Board Working Group, of which I am Chairman, has developed a proposed Military Cryptologic Career Plan for eventual dissemination to the Services as minimum standards to be observed in developing their own individual career plans for their cryptologic components. The final report is now being routed within the four cryptologic organizations by each member of the Working Group for full coordination and signature.

2. The purpose of this D/F is to obtain a similar full coordination of the report within NSA. Representatives of the operating offices and staff components which have primary interest in the subject matter of the report either served as members of the Working Group or offered technical advice to the Group. It is requested, therefore, that to expedite coordination, addressees confine their comments to the functional areas of their assigned responsibilities.

3. In summary, it is requested that the following be submitted to the Executive Secretary, TMB Working Group No. 20 (Room 19-334, Naval Security Station) by 25 February 1955:

   Statement of concurrence in the report or, if any non-concurrence, a definition of the recommended non-concurrence and an explanation of the basis for such non-concurrence.

4. This D/F may be declassified upon removal of the inclosure.

J. S. Holtwick, Jr., CAPT, USN
Deputy Chief of Staff, Operations
Chairman, TMB Working Group for
Project No. 20

Incl:
Copy Proposed Report - TMB Project 20

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Subj: Military Cryptologic Career Plan

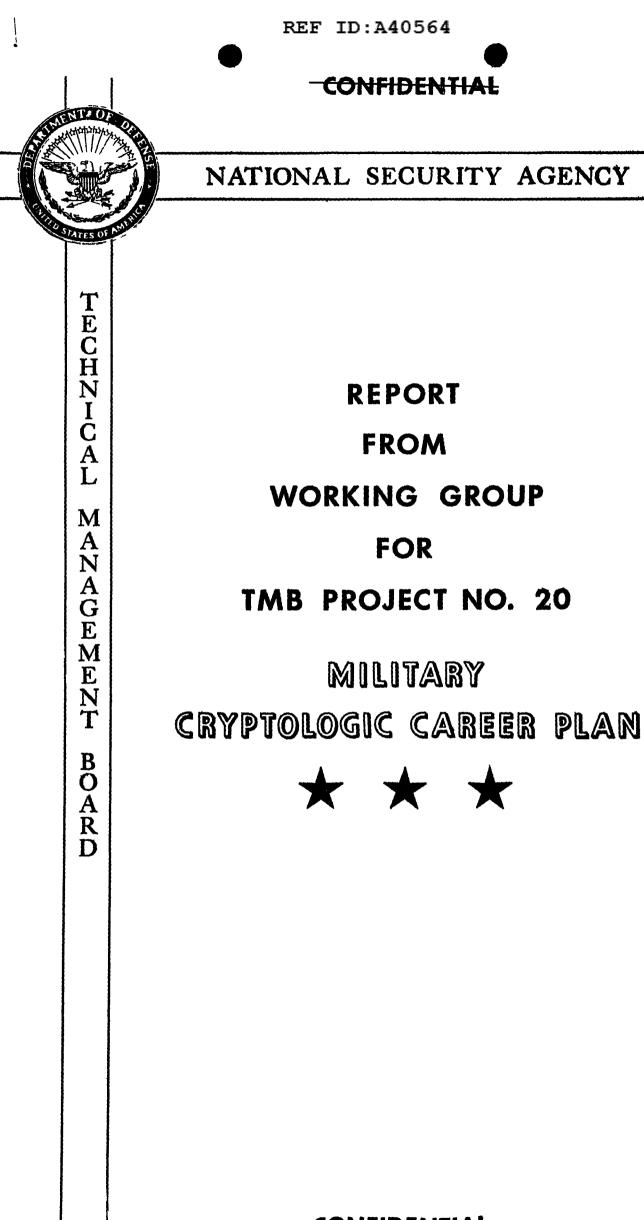TO: DCS/O   FROM: S/A   17 Feb 55   Comment No.
                                                                                      60493/can

Concur. I hope the plan will be placed into effect without delay.

                                        WILLIAM F. FRIEDMAN
                                        Special Assistant

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NATIONAL SECURITY AGENCY

TECHNICAL MANAGEMENT BOARD

REPORT

FROM

WORKING GROUP

FOR

TMB PROJECT NO. 20

MILITARY

CRYPTOLOGIC CAREER PLAN

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31 January 1955

REPORT BY THE WORKING GROUP

FOR

TECHNICAL MANAGEMENT BOARD PROJECT NUMBER 20

DEVELOPMENT OF A GUIDE FOR SERVICE CRYPTOLOGIC CAREER PLANNING

THE PROBLEM

1. To develop a framework within which individual Service cryptologic career plans can be developed, so that these structures will be based on common technical fundamentals.

FACTORS BEARING ON THE PROBLEM

2. The approach of the Working Group was to determine: first, present status of all aspects of career planning; secondly, the status that should exist within one year; and finally, action necessary in order to achieve the desired condition. While the desirability of completely documenting all data pertaining to this project was recognized, practical considerations -- especially from the reader's viewpoint -- precluded inclusion of all but directly pertinent data in this report. Additional factual background data is available in the project file.

3. The Department of Defense, the individual Services, and the cryptologic components within each Service have conducted studies concerning the morale, personnel relations, and welfare factors which affect Service careers. The Working Group has taken cognizance, in particular, of the study by the ad-hoc committees established by the 6969th Air Force Support Squadron for the study of and submission of recommendations pertaining to the Womble Report. Inasmuch as exhaustive studies are nearing completion and in some instances, legislative recommendations are pending in regard to the morale aspects of career planning, which are not peculiar to the cryptologic agencies, such aspects are not considered to be within the study scope of this Working Group.

4. Since technological changes and innovations also affect career planning, the Working Group queried the member agencies in regard to any new plans which, within the next three years, would affect cryptologic operational

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procedures or practices and have an effect on career planning It was determined that consideration must be given to the changing trends in foreign communications, the increasing emphasis in regard to decentralization of the U. S. Cryptologic effort resulting in an increasing delegation by NSA of additional tasks to the Service cryptologic organizations, and the introduction of new operating techniques and more complex and sophisticated equipments. Such anticipated technological changes must be reflected in career specialization, especially as they result in additional requirements for highly skilled Service personnel. As an example, the term "Direction-Finding" was utilized not only in its conventional sense but also to include contemplated technological advances, such as other methods of fixing the position of a radio transmitter than by measuring the azimuth of a received signal.

6. As a result of the member agencies being requested to comment in regard to any present operational problems which can be attributed to inadequacies in career plans, it was ascertained that generally the quality of the intercepted raw traffic, as well as the analytic processes, is deficient as a result of the lack of proficiency on the part of the Services' cryptologic personnel. This lack of technical proficiency results, to a large extent, from the lack of trained specialists which, in turn, is a result of a low-reenlistment rate. In addition to the problems which are common to all components of the military in retaining persons for a military career, the cryptologic components of the military seem to lack one or more of the following:

a. An incentive for Service personnel to continue in cryptologic duties. This could be developed in part by a clear-cut career plan which would furnish guidance in respect to career opportunities and pin-point long-range training requirements.

b. A suitable means for profitable utilization by the cryptologic services in ZI billets of more than a small number of cryptologic personnel returning from overseas assignments.

c. A completely suitable system for not only identifying persons, who through training or experience have acquired cryptologic skills, but also for identifying what those skills are.

7. In considering factors peculiar to the cryptologic agencies, a basic premise followed by the Working Group was that the parent Services will best support their cryptologic components when the policies and procedures of the Services' cryptologic organizations are closely related to the policies and

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procedures of the parent Services. It was the belief that the cryptologic or-
ganizations should differ from the norm only when the norm seriously impairs
cryptologic operations.

8. Following the project scope, prior to detailed study of the problem,
the Working Group after consultation with senior NSA officials from COMSEC and
PROD, agreed to include in the study specialists in the cryptologic organiza-
tions who are engaged in COMSEC and maintenance functions. Accordingly, this
report and related documents refer to "cryptologic career planning" rather than
"COMINT career planning". The inclusion of these two areas was considered de-
sirable because all of the cryptologic agencies generally have cognizance over
them as well as over COMINT.

9. The Working Group considered both peace time and mobilization require-
ments. It is noted that by their nature, the cryptologic organizations are in
peace time actually operating under conditions similar to those encountered in
war time. The Working Group considered whether to base cryptologic career
planning on peace-time conditions, making provisions for necessary changes in
event of mobilization, or on war-time conditions, with modifications applicable
to peace-time conditions only, which could easily be dropped without disrupting
the career complex, during war time. The Group decided that the second approach
was the only sound one, for several reasons, most significant of which were two:

     a. There is no time of "peace" insofar as cryptologic work is con-
        cerned; a state of war always exists, and therefore the crypto-
        logic organization is always mobilized (though not at mobilization
        strength), and carrying out real operations against a real opponent,
        for business reasons, and not just for training.

     b. Now and for the foreseeable future the majority of personnel be-
        ing utilized in cryptologic work are and will be non-career,
        short-term personnel, who are in the military only for their
        period of obligated service.

Under war-time conditions, the influx of a large number of non-career military
personnel who usually are in for the duration only, and the over-riding urgency
that they become operationally effective with the minimum training, dictates that
any sound cryptologic career plan be suitable for the inclusion of such non-career
personnel.

10. The present policies and procedures governing applicable phases of
personnel and training in the member agencies were reviewed, the most significant

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items are as follows

a. Each member organization utilizes a classification system for identifying their occupational skill specialties. At the present time, these systems differ in major respects. The Army Security Agency has recently developed as a part of the Army military occupational specialty system a comprehensive structure for the cryptologic specialties. The Naval Security Group continues to utilize a system which is related to the parent Service only by broad categories for example, the rating of Communication Technician (CT) for enlisted personnel, which is broken down internally within the Naval Security Group by specialized categories and skill codes. The Air Force Security Service utilizes specialties found in several USAF career fields, without any further identification for internal USAFSS purposes. Within NSA, there is currently underway an Occupational Analysis Program which will identify the military billets within NSA by the specialties and the skill level developed by this Working Group and therefore will be of material assistance in planning ZI rotational assignments for Service personnel.

b. Promotion systems for enlisted personnel differ between Services ranging from a system of Service-wide competitive examinations to a system which results in promotions without specified objective examinations being required.

c. The reenlistment rates of the Services' cryptologic organizations appear to follow the reenlistment trend of each parent Service, which without exception is relatively low being from 10% to 30% when considering all reenlistments and even lower when considering only first enlistment personnel Lacking a uniform statistical base, the Working Group was unable to obtain specific, valid overall statistics in this regard.

d. Rotation policies differ between the three cryptologic services. Where a service policy requires that large numbers of first enlistment cryptologic personnel be stationed in the ZI, many complicating factors are introduced.

e. Although active program s for training cryptologic personnel are in effect, these are oriented to the performance of specific

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cryptologic functions and do not appear to be coordinated with assignment, rotational, and grade advancement procedures into workable career development plans.

f. The reserve programs contain pronounced divergences. In view of pending legislation which might change materially the national Reserve concept, these programs were not studied by the Working Group.

11. The personal security requirements and clearance procedures within the cryptologic organizations do not materially affect career planning.

DISCUSSION

12. The purpose of this Working Group was to develop a general cryptologic career plan that would serve as a guide to the cryptologic service agencies in building career structures on some common foundation. Since operational differences and variations in structure of the cryptologic service agencies are major factors affecting a study in this field, guidance, it was believed, must be broad and sufficiently flexible to meet the special situations in the Services. A possibility of three general patterns of career specialization was discussed; i.e., extreme specialization, maximum amount of diversification, and a compromise between these two extremes. Each possible choice was found to be influenced by varying factors such as rotation policies of the parent Services, promotion requirements, technological and operating developments, and similar variables. A system representing a compromise between extreme specialization and extreme generalization was considered the most feasible for further study. The system as presented in subsequent portions of the report provides for specialization in a particular specialty at least through a person's first enlistment, and permits either continued specialization or broadening into other related specialties or cross-over into another specialty in accordance with the philosophies of the several Services in advancing through subsequent enlisted and warrant grades.

13. It was not considered practical to develop detailed career progression; but rather to categorize basic specialties and groups of specialties on which career structures could be based. It was the intent of the Working Group that the Services could then devise, upon such a foundation, career plans to suit their individual needs. In line with this concept, no attempt was made to spell out the relationship between enlisted or Warrant grades and the various levels

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in advancing to the top of a specialty. Instead, the Working Group adopted six arbitrary skill level descriptions to indicate this progression starting with Trainee level; and progressing through Apprentice level; Qualified level; Senior level; Supervisor, Specialist, or Instructor level; and culminating in the Operational Superintendent , Technical Expert, or Training Superintendent level.

14. Tab "A" contains recommended specialty fields for enlisted personnel. These are grouped in four separate branches: Collection, Analysis, Maintenance, and Cryptologic Services. The grouping of specialties in each branch was based on categories of common skills. With respect to training, each specialty represents a requirement for formal basic training or advanced schooling. Each specialty can also be used as the basis for separate advancement in rating examinations or other promotional requirements. To provide flexibility of assignment and as an expedient to operations, or in cases involving a very small number of specialties, it appears desirable in some instances, to break down specialties into more detail. This breakdown applies to jobs which require the application of general skills associated with the specialty to a particular narrow job within that specialty. This method can also be found useful and practical as a means to avoid over-specialization. For the purpose of this report, this level is called a "shred-out" and is governed by the criteria noted below. With regard to language requirements in certain specialties they can obviously be considered "shred-outs"; in others, such as Voice Intercept, each language must be treated as a separate specialty.

> a. Promotion tests and other qualifying promotional requirements would
> be based on the specialty and not on the shred-out. This would
> prevent personnel in the upper skill levels from knowing only one
> · phase of their specialty.
>
> b. Normally, formal courses in the shred-out would not be recommended
> and skills would be learned on the job.
>
> c. Numbers of shred-out jobs in each specialty would be dictated by
> the needs of the individual services.

15. The conditions governing utilization of Warrant Officer personnel differ so much between the Services that the development of only a general concept in respect to Warrant specialties appeared desirable; namely, that provision should be made to insure that all enlisted personnel have channels of potential advancement to Warrant Officer as mentioned in paragraph 12. These are shown in Tab "A".

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16. In respect to officer personnel, three distinct types were categorized:

 a. The Cryptologic Career Specialist who is essentially the "graduate level" specialist in narrowly defined specialties. This type would represent a limited number of officer personnel who would duplicate the skills usually found only in civilian personnel but for which because of potential requirements for such specialties outside of the ZI, especially in wartime, military officer personnel would be required.

 b. The Cryptologic Career Generalist who would make up the hard-core of the cryptologic officers. He would initially serve in a narrow specialty but would rotate to other cryptologic assignments as he advances in rank in order to have the broad capability required of a senior cryptologic officer.

 c. The non-Cryptologic Officer who would rotate between general operational assignments within the military departments and assignments with the cryptologic organizations. If input of Service personnel into cryptologic fields is restricted solely to inexperienced personnel of lower grades, then sterility is generated. Rotation of Service personnel experienced in other Service specialties and branches of the military brings into the cryptologic effort the viewpoint of the Services' operational needs and enables NSA to keep tuned to the realities of operational requirements. In turn, such Service operational personnel upon transferring from a cryptologic assignment, take back into the Service a realization of the capabilities of COMINT.

17. Tab "B" contains a recommended specialty structure for cryptologic career officer personnel, both specialists and generalists. Tab "B" provides career planning for category "a" and "b" officers as defined above. Category "c" officers were not included in this chart, since this subject was considered a matter of general Service policy and not necessarily as a part of a cryptologic career plan. No attempt was made to provide separate plans for reserve, regular, National Guard, temporary and other class of officer personnel, in view of the many categories and Service differences.

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CONCLUSIONS

18. A continued low reenlistment rate will seriously impair the operating efficiency of, and services rendered to the nation's COMINT and COMSEC consumers by the National Security Agency and the Services' cryptologic organizations. The availability of a valid long-range career plan, indicating paths of advancement and training is a recognized means of providing an incentive to both officer and enlisted personnel to continue with the Services. It is considered desirable that each Service cryptologic organization develop a long-range career plan.

19. Since the three Service cryptologic organizations have far more similarities than dissimilarities, a standardized approach to those aspects of career planning peculiar to the cryptologic organizations appears feasible and appropriate. The categorization of cryptologic specialties (Tabs "A" and "B") affords a minimum standard for the Services to utilize in developing cryptologic career plans based on individual needs and in consonance with the requirements of the parent Services.

20. For long-range career purposes, it is considered desirable to restrict ZI billets and highly specialized schooling for enlisted personnel to second enlistment personnel and, for officer personnel, to those officers who indicate by their performance and attitude a desire to become Cryptologic Career Officers. The assignment of "career" personnel rather than "short-term" personnel to duties in the United States and to desirable training is considered to be an excellent means of affording an incentive to the cryptologic careerist.

21. The Occupational Analysis Program within NSA will assist the Services in solving their problem of utilizing cryptologic specialists in their specialties upon return to the ZI from overseas assignments, with the establishment of a system for identifying specific NSA billets into which specific Service specialists can rotate.

22. For career planning purposes in general and in particular for assignment, rotation, and training purposes, it is desirable within each cryptologic service to utilize an auxiliary system of skill identification which would provide readily available data in respect to the qualifications and the proficiency of cryptologic specialists in all cryptologic skills; this is especially needed as a means of maintaining a record of cross-overs between specialty fields. The Naval Security Group SUJCO code is a workable example of such a system.

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23. While it is recognized that rapid changes in missions and operational assignments often require changes in type of cryptologic personnel either to be assigned to NSA or for field duty with the Service cryptologic organizations, the validity and timeliness of the long-range planning and guidance offered to the Services by NSA can materially influence the execution of cryptologic career programs. This is especially true in respect to furnishing guidance to the Services sufficiently in advance of augmentation of the deployment plan for decentralization.

24. When highly specialized training of minimum numbers of Service personnel in the member agencies is required, it is considered desirable for purposes of efficiency and economy to centralize such training with either NSA or one of the cryptologic services administering the program for the three cryptologic organizations. It is recognized that because of cross-funding and similar considerations, such schools might require departmental approval.

ACTION RECOMMENDED

25. It is recommended that the specialty structures which are furnished as Tabs "A" and "B" be utilized by the cryptologic organizations as minimum standards for developing cryptologic career plans and that the Service cryptologic organizations initiate early action with their parent commands to recommend any specific change in career structures which are necessary to meet these minimum standards.

26. It is recommended that progressively, as the Services complete arrangements for establishing career plans to meet the minimum standards specified herein, they supply details to the National Security Agency and that NSA then develop in cooperation with the Services, the minimum standards for qualifications of enlisted personnel for each skill level of each enlisted career specialty included in the Services' plans. This will enable the Services to establish a valid equation between skill levels and enlisted grade structures.

27. It is recommended that in approximately one year a detailed study, similar to this TMB project, be conducted to compare cryptologic career plans developed in accordance with the minimum standards furnished as Tabs "A" and "B" in order to appraise the progress made, provide for the exchange of mutually beneficial information, and make further career planning recommendations in the light of experience gained.

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28. It is recommended that the NSA Occupational Analysis Program include provision for identifying specific billets within NSA which can be utilized by the Services for ZI rotation of specific Service specialties and that this identification process be conducted in close coordination with the cryptologic organizations.

29. It is further recommended in respect to the NSA Occupational Analysis Program, that a determination be made of any NSA billet for which NSA has requested the Services to provide military personnel, but the duties of which are peculiar to NSA, and if such billets are ascertained, each such unique billet be studied to ascertain if civilian rather than military incumbents should be utilized to perform the duties.

30. It is recommended that valid data be furnished by NSA to the Service cryptologic organizations on future plans or changes in present plans which will result in changes in personnel authorizations in order to enable the Services to program for and provide required trained personnel on a timely basis.

31. It is recommended that in approximately one year a detailed study, similar to this TMB project, be conducted of the cryptologic reserve program following the adoption of pending legislation and on the basis of the career plans for active duty personnel which will have been developed as a result of this study.

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TAB A

TITLE   Cryptologic Career Structure for Enlisted Personnel

STRUCTURE   Four Branches

                 1   Collection Branch

                 2   Analysis Branch

                 3   Maintenance Branch

                 4   Cryptologic Services Branch

SYMBOLS   "A" Common to all Services, being basic and vital,
                     recommended as a mandatory separate speciality.

                 "B" Should be a separate speciality, but if Service
                     desires, may be "shred-out"

                 "C" Should be "shred-out" but, if Services desire
                     may be a separate speciality

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COLLECTION BRANCH

TRAINEE	APPRENTICE	OPERATOR	SR OPERATOR	SUPERVISOR INSTRUCTOR	SUPT (OPNS) SUPT (TNG)	CATEGORY

MORSE INTERCEPT	A

NON-MORSE INTERCEPT	A

VOICE INTERCEPT	A

MORSE MONITOR (Could be shred-out of Morse intercept)	B

NON-MORSE MONITOR (Could be shred-out of non-Morse intercept)	B

OPTIONAL

DIRECTION FINDING (Preferably shred-out of Morse or non-Morse intercept)	C

RADIO FINGER PRINTING (Preferably shred-out of Morse or non-Morse intercept)	C

ANALYSIS BRANCH

TRAINEE	APPRENTICE	ANALYST LINGUIST	SR ANALYST SR LINGUIST	SUPERVISOR INSTRUCTOR TECHNICIAN	SUPT (OPNS) SUPT (TNG) TECH EXPERT	CATEGORY
CRYPTANALYST						A
TRAFFIC ANALYST						A
MACHINE AIDS OPERATOR						A
RADIO FINGER PRINTER ANALYST						A
COMINT ANALYST (Could be shred-out of another specialty)						B
COMINT LINGUIST (Could be shred-out of another specialty)						B
WEATHER ANALYST (Could be shred-out of another specialty)						B

OPTIONAL

TRANSMISSION SECURITY ANALYST (Preferably shred-out of traffic Analyst)	C
RADIO PRINTER TRAFFIC ANALYST (Preferably shred-out of Traffic Analyst or non-Morse intercept)	C
DIRECTION FINDING EVALUATOR (Preferably shred-out of Traffic Analyst or intercept specialty)	C

MAINTENANCE BRANCH

TRAINEE	APPRENTICE	REPAIRMAN	SENIOR REPAIRMAN	SUPERVISOR INSTRUCTOR	REPAIR SUPT TNH SUPT	CATEGORY

ELECTRO-MECHANICAL	A

ELECTRONICS	A

OPTIONAL

MACHINE AIDS (Preferably shred-out of Electro-Mechanical or Electronics)	C

TELETYPE (Preferably shred-out of Electro-Mechanical)	C

CRYPTO EQUIPMENT (Preferably shred-out of Electro-Mechanical or Electronics)	C

INTERCEPT EQUIPMENT (Preferably shred-out of Electro-Mechanical or Electronics)	C

CRYPTOLOGIC SERVICES BRANCH

TRAINEE	APPRENTICE	CLERK OPERATOR	SR CLERK SR.OPERATOR	SUPERVISOR	SUPT.		CATEGORY

CRYPTO DISTRIBUTION CLERK (Could be shred-out of another specialty)		**B**

OPTIONAL

CRYPTOGRAPHIC EQUIPMENT OPERATOR (Preferably shred-out of another specialty)		**C**

OPERATIONS CLERK (Preferably shred-out of another specialty)		**C**

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CRYPTOLOGIC OFFICER CAREER FIELD   TAB B

01 02 LIEUTENANT	03 CAPTAIN	04 MAJOR	05 LT COLONEL	06 COLONEL	07-08 GENERAL
Code "A" CRYPTANALYTIC OFFICER			For Specially Selected Officers		
Code "B" MACHINE AIDS OPERATIONS OFFICER			For Specially Selected Officers		
Code "C" COMINT LANGUAGE OFFICER			For Specially Selected Officers		
Code "D" TRAFFIC ANALYSIS OFFICER					
Code "E" WEATHER ANALYSIS OFFICER					
Code "F" COMINT ANALYSIS OFFICER					
Code "G" RFP ANALYSIS OFFICER					
	Code: "H" ANALYSIS OFFICER (Input from Codes "A" thru "G")				
Code "I" MORSE INTERCEPT OFFICER					
Code "J" N/MORSE INTERCEPT OFFICER					
Code "K" VOICE INTERCEPT OFFICER					
Code "L" POSITION FINDING OFFICER (Optional)					
	Code "M" INTERCEPT OFFICER (Input from Codes "I" thru "L")				
		Code "N" COMINT OFFICER (Input from Codes "H" and "M")			
Code "O" SECURITY MONITORING OFFICER					
Code "P" TRANSMISSION SECURITY ANALYSIS OFFICER					
Code "Q" DISTRIBUTION & ACCOUNTING OFFICER					
Code "R" CRYPTOGRAPHIC OFFICER (Optional)					
		Code "S" COMSEC OFFICER (Input from Codes "O" thru "R")			
		Code "T" CRYPTOLOGIC OFFICER (Input from Codes "N" and "S")			
Code: "U" CRYPTO EQUIPMENT ENGINEER OFFICER					

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