

# CHAPTER 1

## THE CRYPTOLOGIC TECHNICIAN, MAINTENANCE BRANCH 3 & 2

### INTRODUCTION

This Rate Training Manual (RTM) and Nonresident Career Course (NRCC) form a self-study package that will enable ambitious Cryptologic Technicians (Maintenance Branch) of the Regular Navy and Naval Reserve, to not only acquire the knowledge necessary to assist them in attaining advancement in rating; but of primary importance, it will increase their value to the Navy through the knowledge gained.

Designed for individual study and not formal classroom instruction, this RTM provides subject matter that relates directly to the occupational qualification of the Maintenance Branch of the CT rating. The NRCC provides the means by which the requirement for completing the RTM may be satisfied. The assignments in the NRCC include the learning objectives and supporting items designed to lead students through the RTM.

The qualifications which were used as a guide in the preparation of this manual are set forth in the *Manual of Navy Enlisted Manpower and Personnel Classifications and Occupational Standards*, NAVPERS 18068-D, SUPPLEMENT NO. 1, Cryptologic Technician, (CT). This chapter is introductory in nature. It defines the duties of the CTM 3 & 2 in general terms, provides information concerning the enlisted rating structure, duties of the other branches of the Cryptologic Technician rating, duties and responsibilities of a petty officer, how to qualify and prepare for advancement, and explains some of the programs offered to career personnel for further advancement to the Warrant Officer or officer grades.

The second chapter provides a listing of those publications and directives that must be available to the CTM 3 & 2 to assist them in performing their duties and in preparing for advancement. These documents are briefly summarized to facilitate ready reference. Basic electricity and electronics are not addressed in this manual since one of the prerequisites for the CTM is that the candidate successfully complete the first 17 weeks of Electronics Technician Class "A" School. It is therefore assumed that the user of this manual will require only a review of these subjects. Chapter 2 tells the technician where to look to find what he needs. The sources of all subject matter covered in the "CT Occupational Standards" manual are included in Chapter 2 and are set forth in an easy to use guide.

Chapters 3 through 8 present a very important concept. This concept is that the entire Naval Security Group (NAVSECGRU) electronics installation at any activity should be considered as a "system". The technician is responsible for maintaining the individual subsystems or equipments that are a part of the overall system.

Three very important things the technician should attempt to learn upon reporting to a duty station are:

What is the operational mission of the station?

How does the station accomplish that mission?

What is the relationship of each individual equipment or subsystem to the mission of the station?

Some of the more commonly used operational equipments, subsystems, and systems which may be encountered at a Naval Security Group activity are discussed in chapters 3 through 8.

Chapter 9 provides information concerning systems maintenance. This includes the types and methods of maintenance, the 3M system, trouble analysis, and personal safety.

Chapter 10 explains the administrative responsibilities of the CTM 3&2, and the mandatory records and reports which the technician will be required to maintain, and provides a brief description of the supply functions related to electronics maintenance.

Chapter 11 provides a description of some types of test equipment which a technician is likely to encounter. It also discusses the practical application of the more basic pieces of test equipment which a technician must know how to use. Test equipment safety precautions are also discussed.

### THE ENLISTED RATING STRUCTURE

The present enlisted rating structure, established in 1957, includes three types of ratings—general ratings, service ratings, and emergency ratings.

General ratings identify broad occupational fields of related duties and functions. Some general ratings include service ratings; others do not. Both Regular Navy and Naval Reserve personnel may hold general ratings.

Service ratings identify subdivisions or specialties within a general rating. Although service ratings can exist at any Petty Officer level, they are most common at the PO3 and PO2 levels. Both Regular Navy and Naval Reserve personnel may hold service ratings.

Emergency Ratings.—Emergency Ratings are used to identify civilian occupational fields used on active duty in time of war, e.g., Stevedore, Transportationman, and Welfare and Recreation Leader. At present, all emergency ratings have been disestablished.

### THE NAVY ENLISTED CLASSIFICATION STRUCTURE

The NEC (Navy Enlisted Classification) structure, of which the NEC coding system is a part, supplements the enlisted rating structure in identifying personnel on active or inactive duty and billets in manpower authorization. NEC codes reflect special knowledge and skills that identify personnel and requirements when the rating structure is insufficient by itself for manpower management purposes.

The NEC coding system facilitates management control over enlisted skills by identifying billets and personnel and enhances efficient utilization of personnel in distribution and detailing. In cases where NEC's reflect special training, inventories of coded billets and coded personnel are also the basis for planning and controlling input of personnel into formal courses that earn NEC's. Consequently, the continuing enlisted strength of the Navy, particularly petty officer allocations, and funds authorized for rating and specialty training depend to an increasing extent upon the accuracy, thoroughness, and timeliness of the NEC coding. Personnel required to support ratings and special programs must be identified by the correct combinations of rates and/or NEC's.

Personnel are automatically assigned NEC's upon satisfactory completion of applicable courses of formal instruction, by the responsible training facility.

This ensures faster NEC assignments and reduces paperwork at the command level. NEC's earned through on-the-job training (OJT) are not automatically assigned; therefore, command attention is required to recommend fully qualified personnel for these NEC's. In those cases where NEC assignments are not restricted to mandatory completion of applicable courses or factory training, recommendations can and should be forwarded for assignment of NEC's based on OJT. The length of OJT is normally at the discretion of individual commanding officers; however, six to twelve months, depending on the complexity of the NEC, should be considered minimum. Specific requirements for NEC's are listed in NAVPERS 18068 Section II Appendix C under an NEC or

NEC group heading. Commanding Officers will ensure that in addition to OJT experience, these specific requirements, including any component NEC's, have been successfully completed. In the case of component NEC's individuals must either hold or be qualified to hold the component NEC's. To recommend personnel for an NEC the Navy Enlisted Classification (NEC) Code Change Recommendation (NAVPERS 1221-1) for active duty personnel or letter form as approved by Commanding Officer Naval Reserve Personnel Center (CO NRPC) for personnel not on active duty is used.

### THE CRYPTOLOGIC TECHNICIAN RATING

Before and during World War II the jobs now performed by Cryptologic Technicians were done by personnel selected from ratings such as Yeomen, Radiomen, Electronics Technicians, and others. Realizing that the work done by those persons assigned to the NAVSECGRU required special skills and training which were not available to each of the ratings then being utilized, the Navy established, in April 1948, the Communications Technician (CT) rating; which in April 1976 changed to Cryptologic Technician (CT). CT's together with specially designated officers and warrant officers, comprise the Naval Security Group.

### BRANCHES OF THE CRYPTOLOGIC TECHNICIAN RATING

As the NAVSECGRU expanded and became responsible for a wide variety of technical programs, the need for specialization—even within the CT rating—became apparent. Consequently, six separate branches have evolved within the CT rating: R or Collection; O or Communications; A or Administrative; M or Maintenance; T or Technical; and I or Interpretive.

The CT rating is a general rating as defined in the foregoing section describing the enlisted rating structure; there are no service or emergency ratings within the CT rating. Separate occupational qualifications for each of the six specialties within the CT rating have been established. Although you are a part of the general CT rating, you will be examined for

advancement on knowledge and skills applicable to your particular branch. Of course, you will also be expected to be proficient in such subjects as security and organization of the Naval Security Group, which are of equal importance to all CT branches.

The duty tours of CT's are varied and interesting. CT personnel may expect to utilize their special skills on board Navy ships, aircraft, and at shore bases located throughout the world. Wherever you work, you will learn that other Navy personnel will be relying on the accuracy and efficiency of your work. Attention to small details is of utmost importance because the results of your work will be used at all levels of government. One small omission or careless error might start a chain of events which could, in addition to costing large sums of money, actually jeopardize the security of the nation.

### OCCUPATIONAL DUTIES

CTM's provide maintenance services for the Naval Security Group wherever they are assigned. In providing these services, they perform the preventive and corrective maintenance on antennas, RF distribution equipment, radio receivers, audio and D.C. distribution systems, communications multiplexing and keying equipment, teletypewriter equipments, automatic data processing equipments, cryptographic devices, and electronic countermeasures equipment.

Basic training for the CTM normally consists of formal schooling in fundamental electronics, part replacement skills, and usage of electronic test equipment. The basic training is generally followed by specialized courses in maintenance of one of the specific subsystems or equipments in current use. As a CTM 3 or 2 you will be responsible for maintaining one of these subsystems or equipments at peak efficiency, 24 hours a day, 365 days a year.

Regardless of where you are assigned, the thought to be kept uppermost in mind is that your duties must be performed so that the mission of the unit to which you are assigned can be effectively carried out. The mission of your duty station is vital to the defense of your country. Take pride in your work. Ensure that each task is completed to the best of your

ability, in the prescribed manner, and that associated reports and records are completed in a timely and accurate fashion.

## THE PETTY OFFICER

### LEADERSHIP

Many books about leadership have been published and more appear each year. Usually they present excellent definitions of complex characteristics such as honor, initiative, and personal behavior. Most of them give interesting examples of the great leaders of the past and how those famous people applied those principles to themselves. Sometimes it seems difficult to relate all of that valuable information to ourselves personally.

As a petty officer, leadership certainly will concern you. As you advance in the CT rating, you will be placed in charge of more people and larger tasks. If you possess leadership ability, you will find respect, efficiency, and a fine working atmosphere wherever you go. If you have failed to train yourself in basic leadership principles, you will find only disappointment and perhaps even ridicule. Do yourself a most important favor at the start of your Navy career and begin to practice leadership now while you are still relatively free of the burdens of higher responsibility. You might one day be very much embarrassed to discover that leadership ability is not mysteriously acquired each time you sew on a new rating badge. Like any other skill, leadership must be studied and practiced. Following are a few basic guidelines for you to follow; whether or not you do so will probably determine whether you will be a success in life or simply another "also-ran".

### MILITARY ABILITY

Petty officers, no matter what their technical specialty may be, must understand and carry out their military duties. They must be able to take charge of a group and show and tell them how a job should be done. A petty officer should know what to do and how to do it when faced with matters of first aid, hygiene, damage control, fire prevention, and nuclear and

biological, and chemical warfare. In short, they must accomplish their military duties and take care of their people. A petty officer's working relationship with others is of great importance to the success of their work and the mission of their activity. In your day-to-day working relationships, you will be required to cooperate with others. This is true not only within your own division but also with individuals in other divisions. Being able to get along is, at times, just as necessary as proficiency in performing your technical skills. The ability to get along with others is within itself a definite skill which can be developed in much the same manner as a technical skill.

### TECHNICAL KNOWLEDGE

As a petty officer you should know your job at least as well as any of those persons working for you, and, if possible, better. Learn as much as you can about the operation of each piece of equipment in your working area. Be able to give honest instructions to your people about all phases of your work. To accomplish this you will probably have to seek answers and guidance from your seniors and will have to read manuals, instructions, and other materials related to your work. You will be surprised how much your seniors will respect and appreciate your curiosity when you ask questions and show an interest in learning more about your job and more about the overall operation of your unit. Learn to use all available working aids.

KNOW where you can find information on all phases of your job. Keep up with new techniques and equipment. Attempt to learn something new about your job every day. Be realistic and actually ask yourself, "Have I learned anything new today?" If not, you moved one step backwards on that particular day.

### PERSONAL BEHAVIOR

Let your people see that you support your seniors just as much as you expect them to support you. If they hear you enforce what may be a disagreeable order from higher authority, they will understand the situation and show their respect by supporting your own order to

them. Share your subordinate problems. Avoid use of profanity and discourage its use among your people. Try to improve your speech and your manner of speaking directly to people. Be moderate in your personal habits. Readily admit you are in error when you make a mistake and do not try to bluff your way through a discussion. Bear in mind a most important rule of thumb in the skill of leadership: "Praise in public but reprimand in private."

### MORAL BEHAVIOR

Providing moral guidance to your people is also the duty of the petty officer. The special emphasis placed on this phase of leadership is set forth in Article 1102 of Navy Regulations, which directs you to observe the high standards of moral behavior and devotion to duty.

Thus, you are required to set an example for those under your leadership by scrupulously observing all rules and regulations of the Navy, by indicating initiative and determination in accomplishing your work, by reflecting high moral standards in your behavior, and by ensuring that your people receive full attention and supervision.

### PERSONAL APPEARANCE

It is basic human nature for people to admire the person who is clean, neatly dressed and carries himself well. Good personal appearance is easy to maintain and is also one of the most readily noted characteristics of the leader. Keep your uniforms as clean and neat as possible and wear them properly. Take a good honest look at yourself now and then, and take measures to improve your personal appearance when possible. Indulge in regular periods of physical exercise. You will not only feel better, but you will also be adding to your qualities as a leader. Develop a ready smile and present a cheerful appearance to your people when the going gets difficult.

### THE NAVY ENLISTED ADVANCEMENT SYSTEM

Many of the rewards of Navy life are earned through the advancement system. The basic

ideas behind the system have remained stable for many years, but specific portions may change rather rapidly. It is important that you know the system and follow changes carefully. BUPERS Notices 1418 will normally keep you up to date.

The normal system of advancement may be easier to understand if it is broken into two parts:

1. Those requirements that must be met before you may be considered for advancement.
2. Those factors that actually determine whether or not you will be advanced.

### QUALIFYING FOR ADVANCEMENT

In general, to QUALIFY (be considered) for advancement, you must first:

1. Have a certain amount of time in pay grade.
2. Demonstrate knowledge of mandatory training material. This may be accomplished by successfully completing the appropriate nonresident training material or in some cases by achieving a suitable score on a local command prepared and administered test. Mandatory training material may be in the form of Rate Training Manuals/Nonresident Career Courses (RTM/NRCC), NAVSECGRU Training Publications/NAVSECGRU Training Courses (NSGTP/NSGTC), Enlisted/Officer Correspondence Courses (ECC/OCC), and Officer Correspondence Courses (OCC). To ensure that NAVSECGRU nonresident courses meet training objectives, closed-book EOC's (End of Course) tests are administered.
3. Demonstrate the ability to perform all the practical requirements for advancement by completing the Personnel Advancement Requirement (PAR), NAVPERS 1414/4.
4. Be recommended by your commanding officer.
5. For petty officer third or second candidates only, demonstrate knowledge of military subjects by passing a locally administered MILITARY/LEADERSHIP examination based on the naval standards for advancement (from NAVPERS 18068 series).
6. Demonstrate knowledge of the technical aspects of your rate by passing a Navywide

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REQUIREMENTS*	E1 to E2	E2 to E3	#E3 to E4	#E4 to E5	E5 to E6	##+E6 to E7	##+E7 to E8	##+E8 to E9
SERVICE	6 mos. service.	6 mos. as E-2.	6 mos. as E-3. 2 years time in service.	12 mos. as E-4. 3 years time in service.	24 mos. as E-5. 7 years time in service.	36 mos. as E-6. 10 years time in service.	36 mos. as E-7. 8 of 13 years time in service must be en-listed.	36 mos. as E-8. 10 of 16 years time in service must be en-listed.
SCHOOL	Recruit Training. (C.O. may advance up to 10% of graduating class.)		Class A for PR3, DT3, IS3, AME3, HM3, FTB3, MT3, MU3, EW3	Naval Justice School LN2		Navy School for AGC, MUC.††		
PERSONNEL ADVANCEMENT REQUIREMENT (PAR) NAVPERS 1414/4			Personnel Advancement Requirement (PAR) must be completed for advancement to E-4 through E-7.					
PERFORMANCE TEST			Specified ratings must complete applicable performance tests before taking examinations.					
ENLISTED PERFORMANCE EVALUATION	As used by CO when approving advancement.		Counts toward performance factor credit in advancement multiple.					
EXAMINATIONS**	Locally prepared tests.	See below.	Navywide examinations required for all PO advancements.			Navywide selection board.		
RATE TRAINING MANUAL (INCLUDING MILITARY REQUIREMENTS)		Required for E-3 and all PO advancements unless waived because of school completion, but need not be repeated if identical course has already been completed. See NAVEDTRA 10052 (current edition).				Nonresident career courses and recommended reading. See NAVEDTRA 10052 (current edition).		
AUTHORIZATION	Commanding Officer		NAVEDTRAPRODEVEN					

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\*All advancements require commanding officer's recommendation.  
 †2 years obligated service required for E-7, E-8, and E-9.  
 #Military leadership exam required for E-4 and E-5.  
 \*\*For E-2 to E-3, NAVEDTRAPRODEVEN exams or locally prepared tests may be used.  
 ††Waived for qualified EOD personnel.  
 ##Advancement to E-7 will be 10 years TIS effective 1 January 1979; to E-8, 13 years TIS effective 1 November 1978; to E-9, 16 years TIS effective 1 November 1978.

\*Recc  
 †Act:

**Figure 1-1.—Active duty advancement requirements.**

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REQUIREMENTS*	E1 to E2	E2 to E3	E3 to E4	E4 to E5	E5 to E6	E6 to E7	E8	E9
TOTAL TIME IN GRADE	6 mos.	6 mos.	6 mos.	12 mos.	24 mos.	36 mos. with total 9 yrs service.	36 mos. with total 12 yrs service.	24 mos. with total 15 yrs service.
TOTAL TRAINING DUTY IN GRADE†	14 days	14 days	14 days	14 days	28 days	42 days	42 days	28 days
PERFORMANCE TESTS	Specified ratings must complete applicable performance tests before taking examination.							
DRILL PARTICIPATION	Satisfactory participation as a member of a drill unit in accordance with BUPERSINST 5400.42 series.							
PERSONNEL ADVANCEMENT REQUIREMENT (PAR) NAVPERS 1414/4	Personnel Advancement Requirements (PAR) NAVPERS 1414/4 must be completed for advancement to E4 through E7.							
RATE TRAINING MANUAL (INCLUDING MILITARY REQUIREMENTS)	Completion of applicable course or courses must be entered in service record.							
EXAMINATION	Standard Exam	Standard Exam required for all PO advancements. Also pass Military Leadership Exam for E4 and E5.					Standard Exam Selection Board.	
AUTHORIZATION	Commanding Officer	NAVEDTRAPRODEVCCEN						

\*Recommendation by commanding officer required for all advancements.

†Active duty periods may be substituted for training duty.

Figure 1-2.—Inactive duty advancement requirements.

advancement examination based on the occupational standards applicable to your rate (from NAVPERS 18068 series, those standards listed at and below your rate level).

Figure 1-1 gives a detailed view of the requirements for advancement of active duty personnel; figure 1-2 gives this information for inactive duty personnel. Remember that occupational standards can change. Check with your division chief or training petty officer to be sure that you know the most recent standards.

If you meet all of the above requirements satisfactorily, you become a member of the group from which advancements will be made.

Advancement is not automatic. Meeting all of the requirements makes you eligible but does not guarantee your advancement. Some of the factors that determine which persons, out of all of those QUALIFIED, will actually be advanced in rate are the score made on the advancement examination, the length of time in service, the performance marks earned, and the number of vacancies being filled in a given rate. If the number of vacancies in a given rate exceed the number of qualified personnel, then ALL of those qualified will be advanced. More often, the number of qualified people exceeds the vacancies. When this happens, the Navy has devised a procedure for advancing those who are BEST qualified. This procedure is based on combining three personnel evaluation systems:

Merit Rating System (Annual evaluation, C.O. recommendations, and points for awards)

Personnel Testing System (Advancement examination score-with some credit for passing previous advancement exams.)

Longevity (seniority) System (Time in Rate and Time in Service)

Simply, credit is given for how much the individual has achieved in the three areas of performance, knowledge, and seniority. A composite, known as the final multiple score, is generated from these three factors. All of the candidates who have PASSED the examination from a given advancement population are then placed on one list. Based on the final multiple

score, the person with the highest multiple score is ranked first, and so on, down to the person with the lowest multiple score. For E-4, E-5, and E-6 candidates, advancement authorizations are then issued, beginning at the top of the list, for the number of persons needed to fill the existing vacancies. Candidates for E-7 whose final multiple scores are high enough will be designated PASS SELBD ELIG (Pass Selection Board Eligible). This means that their names will be placed before the Chief Petty Officer Selection Board, a BUPERS board charged with considering all so-designated eligible candidates for advancement to CPO. Advancement authorizations for those being advanced to CPO are issued by this board. Who, then, are the individuals that are advanced? Basically, they are the ones who achieved the most in preparing for advancement. They were not content just to qualify; they went the extra mile in their training, and through that training, and their work experience they developed greater skills, learned more, and accepted more responsibility.

While it cannot guarantee that any one person will be advanced, the advancement system does guarantee that all persons within a particular rate will compete equally for the vacancies that exist.

### Naval and Occupational Standards

*The Manual of Navy Enlisted Manpower and Personnel Classifications and Occupational Standards*, NAVPERS 18068, Section I, *Navy Enlisted Occupational Standards*; defines rates and ratings by describing the Navy's requirements for enlisted skills. It establishes the minimum occupational requirements and identifies those additional skills required in specified billets which are supplemental to rating skill requirements.

The standards found in Section I are of two general types: (1) naval standards and (2) occupational standards.

NAVAL STANDARDS are requirements that apply to all ratings rather than to any one particular rating. Naval requirements for advancement to third class and second class petty officer rates deal with military conduct, naval organization, military justice, security, watch standing, and other subjects which are required of petty officers in all ratings.



You are required to pass a Navy-wide military/leadership examinations for E-4 or E-5, as appropriate, before you take the occupational examinations. The military/leadership examinations are administered on a schedule determined by your command. Candidates are required to pass the applicable military/leadership examination only once. Each of these examinations consists of 100 questions based on information contained in *Military Requirements for Petty Officers 3 & 2*, NAVEDTRA 10056 and in other publications listed in, *Bibliography for Advancement Study*, NAVEDTRA 10052 (under the heading: NAVAL STANDARDS).

OCCUPATIONAL STANDARDS are requirements that are directly related to the work of each rating. The occupational standards contained in Section I are for the general services ratings. The occupational standards for Cryptologic Technicians can be found in Supplement No. 1 to NAVPERS 18068. The Navy Enlisted Classification Codes (NEC's) are contained in Section II of NAVPERS 18068. The above publications replace the old "quals manual", "CT quals manual" and the NEC manual.

Both the naval requirements and the occupational standards are divided into subject matter groups.

The Navywide occupational examinations for pay grades E-4 through E-7 will contain 150 questions related to occupational areas of your rating. If you are working for advancement to second class, remember that you may be examined on third class standards as well as on second class standards. The *Manual of Navy Enlisted Manpower and Personnel Qualifications and Occupational Standards, Supplement No. 1, Cryptologic Technician (CT)*, NAVPERS 18068 is kept current by means of changes. The occupational standards for your rating which are covered in this training manual were current at the time the manual was printed. By the time you are studying this manual, however, the standards for your rating may have been changed. Never trust any set of standards until you have checked it against an UP-TO-DATE copy of NAVPERS 18068 Supplement No. 1, "Occupational Standards Manual for CT's".

## PERSONNEL ADVANCEMENT REQUIREMENT (PAR) PROGRAM, NAVPERS 1414/4

The Personnel Advancement Requirement (PAR) Program is a new program initiated to replace the Record of Practical Factors (NAVEDTRA 1414/1).

The former "quals" were stated in terms of practical factors and knowledge factors. The new occupational standards, are presented only as task statements. This new format of the occupational standards does not lend itself to the practical factor checkoff list concept of the Record of Practical Factors. As a result, a new form and new concept of determining eligibility for advancement has been developed. The Personnel Advancement Requirement (PAR), NAVPERS 1414/4 (See Figure 1-3) has replaced the Record of Practical Factors. This new system allows a command to evaluate the overall abilities of an individual in a day-to-day work situation and eliminates the need to complete a mandatory, lengthy, and detailed checkoff list.

The E-8 and E-9 are exempted from the program as there are other means of selection for advancement to these paygrades. The E-3 apprenticeships are so broad as to make the development of a single PAR impractical.

Each rating PAR lists the requirements for advancement to paygrades E-4 through E-7 in one pamphlet. It contains descriptive information, instructions for administration, special rating requirements, and advancement requirements in the following sections :

- Section I - Administration Requirements
- Section II - Formal Schooling and Training Requirements
- Section III - Occupational and Military Ability Requirements

Section I contains the individuals length of service, time in rate, and a checkoff for the individual having passed the E-4/E-5 Military Leadership Examinations.

Section II contains a checkoff entry for the individual having completed the Military Requirements Navy Training Course and the applicable Navy Training Course for the rating.

Section III is a checkoff list of task statements. Items in this section are to be

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REQUIREMENTS FOR ADVANCEMENT TO QUARTERMASTER SECOND CLASS (QM2)		
Section I. Administrative	Date	Initials
1. Length of Service - 3 yrs.....		
2. Time in rate - 12 mos.....		
3. Pass E-5 military/leadership examination.....		
Section II. Formal School and Training	Date	Initials
1. Rate Training Manual "Military Requirements for Petty Officer 3 and 2"....		
2. Rate Training Manual "Quartermaster 3 and 2".....		
Section III. Occupational and Military Ability	Date	Initials
1. Complete PMS feedback reports; inventory and order spare parts and special tools using COSAL.....		
2. Lock and unlock ships chronometers; determine gyro error by amplitude.....		
3. Determine position by celestial observations, sounding, relative bearings, and two or more bearings to single object; determine danger angles and bearings.....		
4. Select charts for voyage planning; prepare bridge for getting underway; supervise bridge personnel; solve basic maneuvering board problems.....		
5. Perform general weather forecasting.....		
6. Obtain piloting data from publications.....		
7. Prepare to run degaussing ranges.....		
8. Maintain division training records; instruct personnel by demonstration method; prepare and maintain Watch, Quarter and Station Bill.....		

Figure 1-3.—Sample PAR check-off sheet.

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interpreted broadly and do not demand actual demonstration of the item, or completion of alternate local examination although demonstration is a command prerogative. Individuals are evaluated on their ability to perform the task whether it be by observation of ability in related areas, training received or, if desired, by demonstration.

There is currently a pilot program which includes the Personnel Qualification Standards (PQS) watch station qualifications and preventive maintenance actions as a separate section of the PAR form. Section III under this program lists task statements required of the rating which are not reflected in the Personnel Qualification Standards (PQS) qualifications. As PQS qualifications are developed, PAR forms will be revised.

A copy of the PAR form will be maintained by the supervisor of each enlisted person in paygrades E-3 through E-6. As each requirement is satisfied, entries will be made in the DATE and INITIALS columns by the supervisor. Upon transfer of the individual, the supervisor will complete the entries and the PAR will be inserted in the correspondence side of the enlisted service record for use at the new command. Each individual should check his own service record prior to being transferred; to ensure that all pertinent information has been included.

#### List of Training Publications

*Training Publications for Cryptologic Technicians*, NAVSECGRU INSTRUCTION 1552.1, is a very important publication when you are preparing for advancement. This instruction lists rate training manuals and numerous other reference materials which apply to occupational standards. This instruction is revised periodically.

A list of applicable publications, by rate level, for each CT rating is provided in NAVSECGRUINST 1552.1, *Training Publications for Cryptologic Technicians*. If you are working for advancement to third class, study the material listed for E-4 under your particular branch. If you are working for advancement to second class, study the material listed for E-5, but remember that you are also

responsible for the publications listed for the E-4 level.

All references in NAVSECGRUINST 1552.1 both recommended and mandatory, should be carefully studied. All references listed may be used as source material for the written examinations at appropriate rate levels. Although this list includes the majority of the material upon which examination questions are based, it is not intended to be an absolute or complete listing; other material pertinent to the qualifications may be used as source material for examination questions.

#### Cryptologic Technician Bibliography for Advancement Study

The *Cryptologic Technician Bibliography for Advancement Study* is published and disseminated four months prior to each new exam series; in sufficient time for you to obtain and study the applicable material. The major difference between NAVSECGRUINST 1552.1, *Training Publications for Cryptologic Technicians*, and the *Cryptologic Technician Bibliography for Advancement Study* is that the bibliography lists the specific source material used to construct the upcoming exam series, whereas the *Training Publications for Cryptologic Technicians* provides a general list of sources that may be consulted concerning all matters pertaining to the occupational standards.

#### Rate Training Manuals

There are two general types of rate training manuals. Rating manuals (such as this one) are prepared for most enlisted ratings. A rating manual contains information that is directly related to the occupational qualifications of one rating. NAVSECGRU Training Publications (NSGTP's) are a form of RTM. Subject matter manuals or Basic manuals contain information that applies to more than one rating.

Rate training manuals are revised from time to time to keep them up-to-date technically. The revision of a rate training manual is identified by a letter following the number in its short title.

You can tell whether any particular copy of a training manual is the latest edition by checking the short title in the most recent

edition of the *List of Training Manuals and Correspondence Courses*, NAVEDTRA 10061. (NAVEDTRA 10061 is a catalog that lists all current training manuals and correspondence courses; you will find this catalog useful in planning your study program.)

Each time a rate training manual is revised, it is brought into conformance with the official publications and directives on which it is based; but during the life of any edition, discrepancies between the manual and the official sources are almost certain to arise because of changes to the latter which are issued in the interim. In the performance of your duties, you should always refer to the appropriate official publication or directive. If the official source is listed in the *Cryptologic Technician Bibliography for Advancement Study*, it will be used as a source of questions in preparing the service-wide examinations for advancement.

The following suggestions may help you make the best use of this manual and other Navy training publications when you are preparing for advancement.

1. Study the "CT Occupational Standards" for your branch before you study the training manual, and refer to the "CT Occupational Standards" frequently as you study. Remember, you are studying the manual primarily to meet these standards.

2. Set up a regular study plan. It will probably be easier for you to stick to a schedule if you can plan to study at the same time each day. If possible, schedule your studying for a time of day when you will not have too many interruptions or distractions.

3. Before you begin to study any part of the manual intensively, become familiar with the entire book. Read the preface and the table of contents. Check through the index. Look at the appendixes. Thumb through the book without any particular plan, looking at the illustrations and reading bits here and there as you see things that interest you.

4. Look at the training manual in more detail, to see how it is organized. Look at the table of contents again. Then, chapter by chapter, read the introduction, the headings, and the subheadings. This will give you a pretty clear picture of the scope and content of the book. As

you look through the book in this way, ask yourself some questions:

What do I need to learn about this?

What do I already know about this?

How is this information related to information given in other chapters?

How is this information related to the qualifications for advancement?

5. When you have a general idea of what is in the training manual and how it is organized, fill in the details by intensive study. In each study period, try to cover a complete unit—it may be a chapter, a section of a chapter, or a subsection. The amount of material that you can cover at one time will vary. If you know the subject well, or if the material is easy, you can cover quite a lot of time. Difficult or unfamiliar material will require more study time.

6. In studying any one unit—chapter, section, or subsection—write down the questions that occur to you. Many people find it helpful to make a written outline of the unit as they study, or at least to write down the most important ideas.

7. As you study, relate the information in the training manual to the knowledge you already have. When you read about a process, a skill or a situation, try to see how this information ties in with your current duties or own past experience.

8. When you have finished studying a unit, take time out to see what you have learned. Look back over your notes and questions. Maybe some of your questions have been answered, but perhaps you still have some that are not answered. Without looking at the training manual, write down the main ideas that you have gotten from studying this unit. Don't just quote the book. If you can't put these ideas into your own words, the chances are that you have not really mastered the information.

9. Use nonresident career courses both NAVEDTRA and NAVSECGRU whenever you can. These correspondence courses are based on rate training manuals or on other appropriate texts, such as NAVSECGRU Training

Publications (NSGTP). Completion of a mandatory rate training manual or other nonresident training publication can be accomplished by passing the nonresident career course or End of Course Test (EOC) based on the training manual. You will probably find it helpful to take other correspondence courses, as well as those based on mandatory manuals. Taking a correspondence course helps you to master the information given in the training manual, and also helps you see how much you have learned.

10. Think of your future as you study rate training manuals. You are working for advancement to third or second class right now, but some day you will be working toward higher rates. Anything extra that you can learn now will help you both now and later.

### CAREER DEVELOPMENT AND OPPORTUNITIES

There is an excellent pattern for career development in the Maintenance field based on varied assignments and increasing responsibility, which includes the opportunity to attend several advanced schools. The highly technical and specialized nature of the electronics maintenance field also provides an excellent opportunity for advancement to officer status in the Naval Security Group.

#### Schools

After completion of Class A training and serving specified amounts of time in the field, additional schools are available to CTM personnel. The advanced training is provided both as a part of normal career development and also as preparation for specialized billets which require increased technical skills. In most cases, these advanced schools are also available as reenlistment incentives.

Schools currently available are listed in the effective edition of the Catalog of Navy Training Courses, (CANTRAC), NAVEDTRA 10500, and BUPERS Manual. The BUPERS Manual and BUPERS directives provides guidance for obtaining advanced schooling available as reenlistment incentives.

#### Advancement to Officer Status

Advancement to officer status by enlisted personnel is possible via several programs. A few of these programs you would be eligible for as a CT, include Warrant Officer Program, the Limited Duty Officer Program (LDO), the Officer Candidate School (OCS) Program, the Navy Enlisted Scientific Education Program (NESEP), and the U.S. Naval Preparatory School (prior to Naval Academy final acceptance).

Training under these programs lead to a commission in the Line, restricted line, Limited Duty Line, Staff Corps, or Warrant Grades.

Warrant Officers are limited in their duty to the broad technical fields associated with their former rating. Advancement to warrant Officer may be made from CPO or above. Education, length of service, and maximum age limits are specified in the requirements for the program in the BUPERSMAN. However, these requirements can vary according to circumstances. If you are interested in advancing to Warrant, ask your Education Services Officer for the latest requirements that apply to your particular case. Competition in this program is very keen, and therefore you should start preparing early in your career. One basic preparation you can make is to continuously enroll in professional and related correspondence courses, and also to further your formal education.

NESEP is a college training program for qualified enlisted personnel (E-4 and above) on active duty which leads to a commissioned grade and a career as an Unrestricted Line Officer. Both Regular Navy personnel and Naval Reservists serving on active duty for training are eligible to apply. The complete list of requirements for NESEP are listed in BUPERS manual.

Enlisted personnel serving on active duty, including members of the Naval Reserve on active duty, also have the opportunity to compete for appointments to the U.S. Naval Academy. Eligible personnel must first successfully participate in a Navy-wide examination for assignment to the U.S. Naval Preparatory School. Graduates of the Naval Preparatory school are then selected by the Secretary of the Navy for appointment to the Naval Academy. Education, length of service,

maximum age limits, and other qualifications are listed in BUPERSMAN.

Opportunities for enlisted personnel to advance to officer status are not limited to the four programs briefly described above. Complete and up-to-date information concerning these and other programs is available from the Educational Services Officer (ESO) at your current duty station.

### OTHER SOURCES OF INFORMATION

One of the most useful things you can learn about a subject is how to find out more about it. No single publication can give you all the information you need to perform the duties of your rating. You should learn where to look for accurate, authoritative, up-to-date information on all subjects related to the military requirements for advancement and the professional qualifications of your rating.

Some of the publications described in this course are subject to change or revision from

time to time, some at regular intervals, others as the need arises. Official publications and directives are cited without the suffix which indicates the edition. It is your responsibility when using a publication or directive to be sure that you have the latest edition. When using a publication that is kept current by means of changes, be sure you have a copy in which all official changes have been made. Studying cancelled or obsolete information will not help you do your work or advance in rating; it is likely to be a waste of time, and may even be seriously misleading.

### TRAINING FILMS

Training films available to naval personnel are a valuable source of supplementary information on many technical subjects. Films that may be of interest are listed in the *United States Navy Film Catalog*, NavWeps 10-1-777. This catalog is now listed in the *NavSup Forms and Publications Catalog*, NavSup 2002, as NavAir 10-1-777. Supplements to the Film Catalog carry the latter number.

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