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PROPOSED OPNAV INSTRUCTION FOR TEST AND EVALUATION OF NAVY TRAI--ETC(U)
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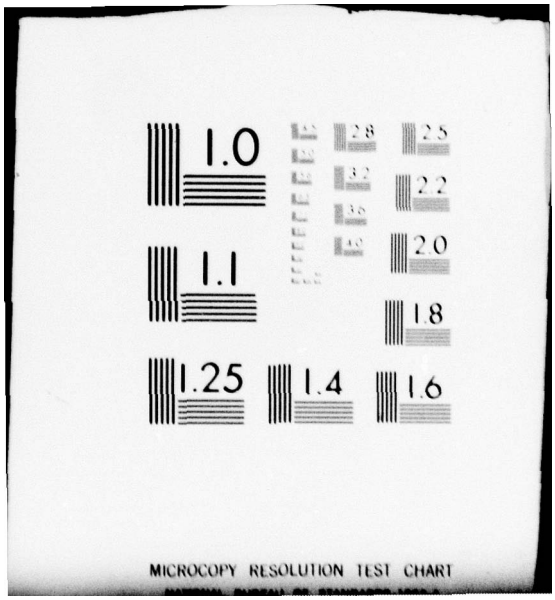
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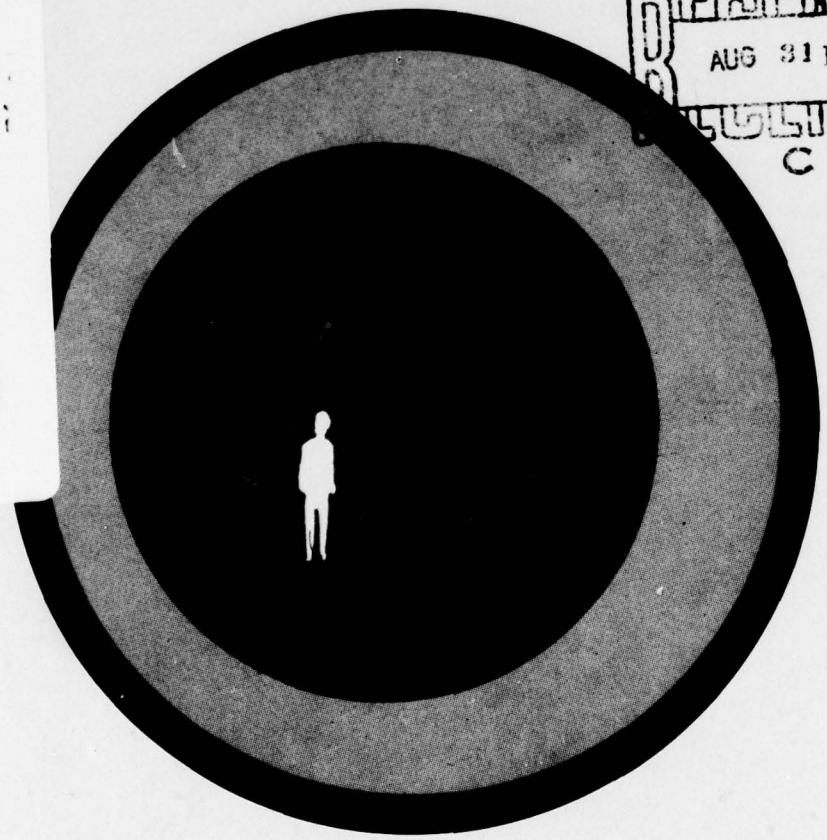
TRAINING ANALYSIS AND EVALUATION GROUP

LEVEL II

TAEG REPORT NO. 71

PROPOSED OPNAV INSTRUCTION FOR TEST AND EVALUATION OF NAVY TRAINING DEVICES PROCURED UNDER RDT&E FUNDING



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JUNE 1979

TRAINING ANALYSIS AND EVALUATION GROUP

ORLANDO, FLORIDA 32813

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(6) PROPOSED OPNAV INSTRUCTION FOR TEST AND EVALUATION OF NAVY TRAINING DEVICES PROCURED UNDER RDT&E FUNDING

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First unit training device acquisitions are to be acquired with R&D funds. Utilization of these funds requires the performance of an independent operational test and evaluation in addition to development test and evaluation. This study examines the ramifications of that requirement, and proposes an OPNAV instruction, closely paralleling OPNAVINST 3960.10, Subj: Test and Evaluation, for review and approval. In the process of preparing the instruction, an acquisition process flow was developed to insure the operational test agent and the training command become involved as early as practical.

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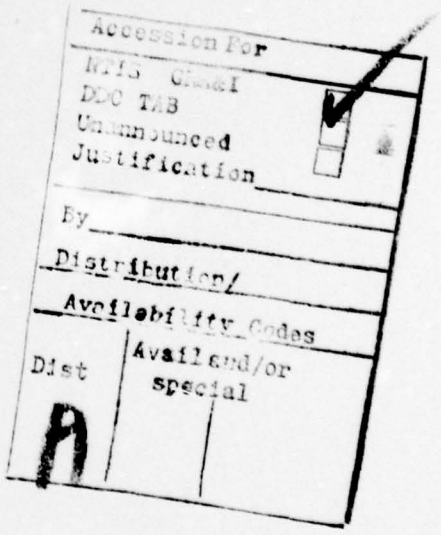


SECTION I

INTRODUCTION

The Department of Defense (DOD) Budget Guidance Manual (Change 5, 12 August 1977) promulgated a change in budgeting practice for first item training devices which required that certain of these devices be procured using Research, Development, Test, and Evaluation (RDT&E) funds. Specific guidance was contained in Director of Budget and Reports memorandum dated 14 December 1977 as follows:

> Training Devices. Training devices that employ new or off-the-shelf computers and system components, but have training system unique software and interface components, will be developed and procured with RDT&E funds. Typically, these training devices have small quantity requirements and the initial or prototype system is used for operational training. The initial or prototype system, and all of its support cost through service acceptance, will be funded in RDT&E. RDT&E will not fund beyond the initial system unless more than one full system is required to demonstrate the training device performance.

Termination of RDT&E funding would occur at service acceptance of the training device(s). A budgeting process consistent with this policy will be implemented beginning FY 1980.

DOD and Secretary of the Navy (SECNAV) instructions stipulate that all acquisition programs funded with RDT&E monies will undergo a test and evaluation (T&E) cycle as part of the acquisition process. The completion of various phases of T&E demonstrates, in part, the achievement of those program objectives and milestones that serve as the pacing function of individual acquisition programs. No authority to procure, other than the initial or prototype article, will be granted until the system has satisfactorily completed initial T&E.

Historically, it has been the rule that the training device test and evaluation process is less formally structured than its operational hardware counterpart. Further, such T&E is normally oriented toward the satisfaction of technical criteria, and evaluation has typically been subsumed under the Development Agent (DA) rather than being fully independent. In view of the movement of prototype training devices to RDT&E funding, and the implications of this initiative for test and evaluation, the Chief of Naval Operations (CNO) by memorandum Serial 991B/644005 of 10 January 1978 suggested that the Chief of Naval Education and Training (CNET) give consideration to developing the capability for independent evaluation of training devices.

OPNAVINST 3960.10 provides a comprehensive and proven method of conducting T&E for operational hardware and systems. The basic concepts and policies are understood throughout the Naval T&E community. For this reason, any training device T&E instruction should be based on existing concepts and policies.

However, it was recognized that training device acquisition programs differ sufficiently from operational equipment acquisition programs that direct application of OPNAVINST 3960.10 is not feasible. Thus, an instruction for the T&E of training devices will differ in some respects from OPNAVINST 3960.10, but will be based on the philosophy underlying present T&E efforts.

PURPOSE

The Training Analysis and Evaluation Group (TAEG) was tasked by CNET to conduct a general review of the subject of training device development and acceptance for service use. The purpose of this study is to produce a draft OPNAV instruction which will provide for the efficient and effective acquisition, evaluation, and acceptance of training devices acquired with RDT&E funds. The specific objectives are:

- identify current factors in all services impinging on training device acquisition, evaluation, and service acceptance
- develop a classification system for training devices useful for evaluation purposes
- prepare a proposed OPNAV instruction
- coordinate and revise the proposed OPNAV instruction at a conference convened for that purpose.

ORGANIZATION OF THE REPORT

In addition to this introduction, the report includes four sections and two appendices.

Section II is a summary of current test and evaluation policy and practices in the Navy, Marine Corps, Army, and Air Force. It provides a foundation upon which the proposed instruction is based.

Section III contains the technical approach used and the guidelines followed in developing the proposed instruction. Section IV discusses the major factors which influenced the proposed instruction. Included are policy factors, management factors, POM/budget process factors, and the integration of the device acquisition process into the overall system.

Section V contains a series of policy issues for CNET consideration.

Appendix A is the proposed OPNAV instruction; a glossary of terms used in this report is provided in Appendix B.

SECTION II

CURRENT T&E PRACTICES IN THE MILITARY

As a prelude to the development of the proposed OPNAV instruction, a summary of existing policy and practices in the four services is presented. An understanding of current T&E practices is necessary since the proposed procedures are based on these practices.

NAVY

PRACTICE. Current policy directives of the Navy do not address training devices as distinct from other acquisitions. However, practice in the service differs from policy in that training device acquisition programs are not subjected to a complete test and evaluation program. Rather, they are acquired more by a traditional exception to existing policy. This traditional approach is comprehensible when training devices are compared to operational hardware and systems in terms of cost, requirements, and timing.

Although neither the cost of acquisition nor the type of requirement that led to the acquisition affect the actual T&E of training devices, both do have an appreciable bearing on the method whereby T&E is conducted. Cost defines the level and who conducts the Operational Test and Evaluation (OTE); requirements define the participants.

COST. The Acquisition Categories (ACATs) are established in OPNAVINST 3960.10 primarily on the basis of the total cost of an equipment or system acquisition program. Major training devices; i.e., high cost devices, are acquired either in conjunction with the hardware or independent of the hardware. Each type of major acquisition is discussed in the following paragraphs. Minor training devices generally fall under the ACAT IV provisions. This means no independent operational tests and evaluations are required, and the DA is responsible for all T&E as well as the program management.

Major training devices acquired in conjunction with major hardware acquisition programs are frequently included as an integral part of the hardware contract. Many elements of device cost are subsumed under the hardware costs and are not readily identifiable with the device. In addition, the hardware acquisition manager is, simultaneously, the training device program manager. Policy dictates that the cost of the total program identifies the level of T&E required. Although the hardware, because of program cost, is subjected to a complete T&E cycle, including an independent OTE, the training device is subjected solely to acceptance tests which insure it meets the technical specifications. It can be reasoned that this is adequate for the device since its specifications are derived from the hardware and the device is, in reality, a component of the training subsystem of the operational system. Thus, the cost of the device is a portion of the cost of a subsystem within the total acquisition cost and, therefore, not independent of the hardware cost. The fallacy of the rationale is that the applicable elements of educational philosopny are not considered in an OTE derived solely from technical specifications.

Independent major training device acquisitions may, or may not, be related

to a hardware acquisition program. Irrespective, funding is channeled through the device DA. Despite the independence of these buys, and regardless of ACAT, no independent OTE is conducted. Service acceptance, which in this case means insertion in the Navy inventory, is predicated solely on a technical evaluation and Fleet Project Team acceptance. Fleet Project Teams are subject matter experts.

REQUIREMENTS. The requirement for a training device should always be established on the basis of a perceived or actual operational need. These needs may be either direct or indirect. A direct requirement stems from an operational need and supports the training system for new or modified hardware. An indirect requirement arises from a training need and supports a training system which needs the device to illustrate a concept or provide some measure of hands-on training.

Direct Requirements. Direct training device requirements are usually established by operational or hardware development personnel. The need for training becomes apparent, and these people take the approach that teaching on the equipment or on a high fidelity simulator will accomplish the training mission. Generally direct training requirements are not recognized, or acknowledged, until relatively late in the acquisition cycle, or until the hardware has become operational. This causes time to become a constraining element. As a consequence, the training device is acquired without the prior establishment of a course of instruction including training strategies and performance evaluation. Thus, training personnel find it necessary to devise a course tailored to the device capabilities rather than to design a course to meet the specific training requirement. This sequence is the reverse of that which should occur. The device dictates the training system requirements rather than the training system objectives dictating the need for a device.

Indirect Requirements. Indirect training device requirements generally originate within the training community. This results in the identification of a requirement for a training device to support an existing or proposed course of instruction.

In the instance where a course of instruction is supported by a device, and this training device requires modification or replacement, a separate problem arises. Although the requirement is identified, it usually is given a low priority because the school has something with which to teach. This situation can cause T&E difficulties because advance planning for budgetary support and RDT&E Support for T&E is nebulous with respect to time. In addition, the Training Command is not a major claimant for R&D funds; therefore, the acquisition of required funding is difficult and must compete with nontraining R&D requirements.

TIMING. Most simple training devices require approximately 18 months from the statement of the requirement to final government acceptance. Such a brief cycle permits only 6 months for a contractor to design and produce the device; the remainder of the 18 months is used for administrative and technical planning functions. As devices become more complex, this overall time is extended. For example, any sophisticated, computer controlled simulator which combines a visual and electronic capability will generally require from 42 to 48 months from the statement of the requirement to government acceptance. The practice has been to leave direct training requirements to the latter portion of the

acquisition cycle in order that the greatest amount of information on the hardware can be obtained. In terms of training devices, this practice can cause the program manager to use shortcuts in order to save time. Time can be gained in two ways--first, reduce front-end efforts by eliminating front-end training analysis and, second, do not schedule an OTE (Training Evaluation).

Indirect requirements are equally constrained by time. When the requirement for a device is established, it is needed then, not in the future. This causes the acquisition sponsor to take every possible step to reduce acquisition time. The elimination of OTE is one obvious method.

POLICY vs. PRACTICE. A discussion of existing policy vs. practice highlights deviations in the training device acquisition process from the hardware acquisition process. Subsequent paragraphs discuss the major considerations.

Policy. DOD policy for defense systems acquisitions was established by DOD Directive 5000.1. This policy was implemented within the Navy by SECNAV Instruction 5000.1. The actions required to implement policy for hardware and operational systems are detailed in OPNAVINST 3960.10. No reference to training devices is contained in either policy directive or the implementing instructions. It is logical to presume that training devices are to be acquired in the same manner as operational hardware and systems.

Mechanics of Implementation.

1. Operational Systems. The mechanics of OPNAVINST 3960.10 are strictly adhered to in the acquisition of operational systems and equipments. The operational test agent (OTA) is involved with the program from the Mission Element Needs Statement (MENS) or Operational Requirement (OR). A review of the Navy Decision Coordinating Paper (NDCP), or equivalent document, is made by the OTA and comments submitted to the DA. The Test and Evaluation Master Plan (TEMP) is a joint effort, and each agent; i.e., DA and OTA, monitors the testing of the other agent. Reports by each agent are scrutinized by the other, and areas of disagreement are settled at a conference or are forwarded to higher authority for decision. Approval for Service Use (ASU) is granted using both the Operational Evaluation (OPEVAL) and Technical Evaluation (TECHEVAL) as major inputs.

2. Training Devices. OPNAVINST 3960.10 is not followed in the acquisition of training devices with a minor number of exceptions. This discussion will not address the exceptions, rather it will be confined to the general procedures followed.

a. Devices in support of major acquisition programs, direct requirement, are identified by the DA or the mission sponsor. No attempt is made to define the course of instruction, to identify the behavioral objectives of the course, or to establish Job Performance Measures (JPM) prior to establishing the requirement for a device. A functional specification for the device is prepared under the auspices of the DA. The Training Command is brought into the program at the Navy Training Plans Conference (NTPC), by which time the training device is well started toward acquisition. No attempt is made to develop a TEMP since there is no designated OTA. A Fleet Project Team is formed to act as an advisor and to assist in acceptance testing. This team is responsive to the DA, the fleet

commander, and the mission sponsor, hence is not independent, nor is it prepared to act as experts in the field of training. Test and evaluation is confined to technical areas and is restricted to an assurance that the device meets the technical specifications. There is only an acceptance by the government from the contractor; no formal ASU procedures are implemented before follow-on units are procured.

b. Devices required in support of other than major acquisition programs; i.e., indirect requirements, are identified by the training agent. In these instances, a course of instruction and learning objectives are defined prior to the decision to acquire the device. A functional specification is prepared by the training agent and, from this, a technical specification. The acquisition process parallels the procedures described in paragraph a. above through, and including, acceptance. Again, there is no independent OTA; consequently, no OTE.

Policy Deviation Causes. Training devices differ from operational equipments and systems in a number of significant ways which cause them to be viewed as exceptions to the general policy. The major differences include the following:

- Usually, training is a subsystem of the operational system; it is supportive of the operational system and, therefore, no independent T&E is considered needed.

- Training devices to be maximally effective must have an accompanying instructional program. Training devices support a course of instruction, and these courses support the operational system.

- Based on cost alone, most training devices are classified ACAT IV. Thus in terms of current policy, management control of the acquisition process rests with the Material Command rather than the Training Command.

- Frequently, the Training Command, the primary user of training devices, has no input to the device design until the NTPC. The NTPC for major hardware acquisitions frequently occurs subsequent to contract award. In total package procurements the contract includes a training package (with devices); consequently, the Training Command is presented with a training package into which it had little or no official input.

- Commander, Operational Test and Evaluation Force (COMOPTEVFOR) has stated that his mission does not include nonoperational hardware. This has been supported by CNO (OP-098). There is no designated independent operational test and evaluation agent for shore-based training devices.

MARINE CORPS

The Marine Corps has no independent T&E policy and does not conduct an independent OTE. Navy policies and directives are applicable since the Navy acquires most Marine Corps training devices.

ARMY

The Army organizational structure differs from the Navy structure in such a way that the conduct of T&E cannot be paralleled. The Training and Doctrine Command (TRADOC) is responsible for two major efforts--first, training and, second, the establishment of operational doctrine which includes the tactical use of hardware and personnel. Because of this dual function many Army requirements, both operational and training, originate from the same command. TRADOC Circular 70-1 establishes procedures for training devices T&E of nonmajor acquisitions. Army Regulation 71-3 (AR 71-3) outlines the T&E requirements for systems designated as major by the Department of the Army.

Navy training is concentrated in a few commands, and each of these commands instructs in a very similar manner to each other. Training is, essentially, across the board. Army personnel are corps trained, and training is assigned to specific forts, each fort responsible for a given type of training; for example, Fort Rucker does all aviation training; Fort Knox, armored and engineering; Fort Bliss, air defense. At each Army training establishment there is a Board or Test Activity which is responsible to TRADOC for the test and evaluation of new training devices. However, this same unit is also involved in the identification of the requirement. Thus, the requirement for a device is defined and its subsequent T&E conducted by the same agent.

Management of T&E varies with the designation of major or nonmajor category. Those designated as major acquisitions are managed by the Army Operational Test and Evaluation Agency (OTEA); nonmajor acquisitions are managed by TRADOC or a TRADOC-designated command. In both instances the actual test plan is developed and executed by the Board or Test Activity at the fort. Test plans are approved by the test manager, and these same managers have the responsibility for monitoring the execution.

AIR FORCE

Air Force T&E is governed by Air Force Regulation 80-14 (AFR 80-14). This document and OPNAVINST 3960.10 are similar in their requirements. Training devices in general are not discussed, but AFR 80-14 is specific in the requirement to conduct an independent T&E of simulators, even one-of-a-kind.

Discussions with Air Force personnel revealed that, with the exception of simulators, there is no policy which requires an independent OTE of training devices, and none is contemplated at the present time.

SECTION III

TECHNICAL APPROACH

This section presents the approach used in preparing the proposed instruction together with a series of underlying guidelines. The guidelines were established to insure that the T&E of training devices remained compatible with existing procedures for the acquisition of operational hardware and systems. How these affect the draft instruction is described in section IV.

To accomplish the study goals, a rational analytic approach was employed. The work was organized in two phases:

- Phase 1: Investigated the current factors impinging upon training device acquisition, evaluation, and service acceptance; examined the possibility of classifying devices for evaluation purposes; and recommended a concept for device evaluation and acceptance (a proposed OPNAV instruction).

- Phase 2: Based on the phase 1 output, prepare, in concert with OPNAV and relevant user commands, a comprehensive OPNAV instruction to provide for the effective and orderly acceptance of all Navy training devices acquired with RDT&E funds.

Implementation of this work effort required the acquisition of information on current policies and practices affecting T&E and training device acquisition from all services. The following specific steps were taken:

- review of policy documents from DOD, SECNAV, CNO, CNET, and the Chief of Naval Material (CNM) to provide an understanding of Navy policies dealing with training device acquisition, Navy test and evaluation, and service acceptance

- acquisition of information from those various Navy commands/ activities tasked to acquire, evaluate, and accept both hardware and training devices to provide an understanding of how policy is translated into practice

- acquisition of information from those activities involved in the budgeting and funding of training devices to insure that financial/fiscal policies are compatible with T&E requirements

- review of policy documents and the acquisition of information from other services (Marine Corps, Army, Air Force) charged with the acquisition and T&E of training devices to identify potential applications for Navy use

- acquisition of information from the COMOPTEVFOR to acquire an understanding of the specific techniques used in the Navy T&E of hardware and to identify potential application of those techniques to training devices.

The information and data gathered during these steps were used to establish training device T&E requirements and to identify those factors which affect training device T&E implementation. A technique for classifying training devices for test and evaluation and a methodology for the future T&E and service acceptance of training devices were developed. Also, a process flow which integrates all of the elements affecting training device acquisition and T&E was developed to facilitate functional compatibility with current acquisition and fiscal procedures.

STUDY GUIDELINES

During the development of the technical approach, it became obvious that limitations to the development effort were necessary to preclude unwarranted deviation from existing practice. As a control the following three guidelines were established.

RDT&E FUNDING GUIDELINES. With the Comptroller of the Navy (NAVCOMP) decision that the first article or prototype training devices be procured with RDT&E funds, two major problems became apparent and required resolution in the proposed instruction. First, since training devices generally fall in the ACAT IV category money constraints, the management responsibility for acquiring these devices rests with a Navy Systems Command (SYSCOM). SYSCOMs are oriented toward engineering, design, managerial, and contractual functions and have little expertise in the training and education field. Second, the cost of the time to accomplish T&E, particularly an independent OTE, could cause excessive delays in the training device acquisition process. To accommodate these two problems, the following rules were established:

- The training and educational development process which leads to new training devices must insure that device requirements are no more nor less than is actually required. Both over and underdesign of training devices are expensive and inefficient.

- Training device OTE should be planned for and conducted by persons who possess practical expertise in the education field. This will give a high probability that the test and evaluation will be conducted quickly using minimum resources.

- The application of established practices used in hardware T&E to training device T&E will establish a better working relationship and understanding between the hardware acquisition command and the training community.

- The development of detailed implementation procedures for the T&E of training devices must be the responsibility of the activity designated to perform the actual evaluation. The proposed instruction will be restricted to the general procedures necessary to satisfy the CNO requirements and established DOD policy.

- The draft instruction must recognize the basic element underlying the design, development, acquisition, and use of any training device; a training device does not exist in and of itself but rather that

it exists to support a training requirement. Training devices cannot be designed or evaluated in a vacuum, rather in every instance, they perform a supporting role in a total training system. For T&E, this means that assessment of effectiveness is accomplished not only in terms of what the device can do but also in terms of how well it supports identifiable, required training. Thus, a complete T&E of a training device requires the existence of stated training requirements, usually provided in the form of course behavioral objectives and JPM.

EXISTING PROCEDURES GUIDELINES. The Navy follows a well established, proven series of procedures in the T&E of operational hardware and systems. These are in consonance with established policy and are thoroughly understood by both acquisition managers and test personnel. In the interest of efficiency, it is considered highly desirable to emulate these procedures whenever possible. To insure this:

- there must be a minimum deviation from existing policy for operational hardware and systems
- there must be a high degree of management flexibility incorporated into the T&E process
- the implementation of the T&E process must maintain the established chain of command
- the T&E policy must be compatible with the existing POM/budget cycles
- the use of resources; i.e., time, personnel, and money must be held to a minimum
- established procedures for the Development Test and Evaluation (DTE) of training devices require no modification in substance from the procedures established for operational systems or equipments. These procedures have served well and are regularly updated as a matter of course. Specific tests that make up the DTE portion of T&E remain the purview and responsibility of the DA.

PACING FUNCTION GUIDELINES. Current policy directives prescribe that the achievement of acquisition program milestones, which include T&E, is the pacing function that drives both the program structure and resource allocation. This series of published milestones is equally applicable to operational equipment/systems and training devices. This means that resources will be allocated and the acquisitions so timed that no critical steps will be omitted.

SECTION IV

FACTORS INFLUENCING THE OPNAV INSTRUCTION

This section presents in detail the major factors which must be accounted for in the proposed OPNAV instruction. The factors are organized into four primary areas, each of which is discussed in turn. The four areas are policy, management, the POM/budget cycle, and device integration into the overall acquisition system.

POLICY

Policy refers to the underlying structure in RDT&E acquisition programs. This emphasizes a minimum deviation from existing operational hardware acquisition procedures.

CHAIN OF COMMAND. The Navy establishes and assigns responsibility, authority, and accountability through an organizational hierarchy. Implementation of a process for test and evaluation of Navy training devices should maintain the specific elements of command chains. If this is not done, then the relative placement of the elements must be sequenced so that they provide for the realistic management and integration of that process into the Navy as a whole.

Implications of this for the recommended T&E process include the following:

- specific definition of the responsibility/function of all activities involved in training device T&E
- establishing a organizational structure which will not violate currently operating echelons and normal chains of command
- placing the OTA in the training organization as an independent agency but responsive through the established hierarchy.

DOCUMENTATION. The need for adequate, timely, and accurate documentation of events and actions in the acquisition and T&E process cannot be overemphasized. Required documents are identified in the proposed instruction, and various enclosures and tabs to the instruction provide sample formats. Required documents include:

- MENS, or equivalent
- NDCP, or equivalent
- Requirement(s) Statement(s)
- JPMs/Behavioral Objectives
- Device Test and Evaluation Master Plan (DTEMP)
- Device Test Plan
- Test Results Reports.

T&E SELECTION. Training devices exist in a variety of sizes, capabilities, and costs. Accordingly, different levels and types of T&E are required. The application of existing ACAT categories to training device T&E is not fully satisfactory. For example, all ACAT III acquisitions are required to have independent evaluations, and ACAT IV acquisitons are managed outside of the Training Command. A method of categorizing training devices was developed to select those in the ACAT III and ACAT IV categories for which the operational portion of T&E must be accomplished by an independent agent, and those for which operational testing can be accomplished by the DA.

Cost alone cannot be the sole criteria for T&E selection. Some relatively inexpensive devices are designated ACAT III in order to maintain acquisition managerial control within the Training Command. This situation is particularly applicable for devices acquired because of indirect requirements. Yet, these same training devices may not warrant the time and resource expenditure necessitated by an independent OTE. A system is needed whereby managerial control remains within the Training Command, yet an independent OTE is not required. Conversely, some ACAT IV training devices may be of such importance that they require an independent OTE.

RDT&E support, whether Fleet or Other, is sometimes required in the execution of T&E. This support is best obtained using the DTEMP rather than through other means. Inexpensive devices in the ACAT IV category which require RDT&E support should also involve this simple method.

To accommodate situations arising from T&E selections, Device Categories (DCAT) which apply only to ACAT III and IV training device acquisitions have been developed by TAEG. These DCATs permit the Assessment Sponsor to determine whether a training device requires an independent OTE or the submission of a DTEMP. The categories, as included in the proposed OPNAV instruction, are shown in table 1.

TABLE 1. DEVICE CATEGORIES (DCAT)

DCAT	Designated By	Nominal Dollar Value Thresholds		Criteria
		RDT&E	Production	
A*	Assessment Sponsor	$1.5M	$ 5M	Other programs recommended by CNET, OP-098, or DA
B	Assessment Sponsor			Training devices which interface directly with operational systems and require OTE with that system
C*	CNET			All programs not designated DCAT A or B

*Programs below the DCAT-A dollar threshold will normally be designated DCAT-A if:

a. They require an independent OTE to support key program decisions, or
b. They require Fleet or Other RDT&E Support.

MANAGEMENT

A high degree of flexibility is required in the T&E process to insure that training device acquisitions are timely and that minimum resources are expended. The management functions which directly affect this flexibility are discussed below.

RESOURCES. Policy established for the T&E of training devices must reflect practical considerations. Two specific resource constraints that have the greatest affect on the T&E process are time and the use of fleet and other support personnel/equipment in the process.

In general, the time available for training device acquisition T&E is compressed in comparison to counterpart hardware buys. For example, the development of a new simulator to support training for a new weapons system presumes the identification of related course requirements and behavioral objectives prior to the decision to acquire the device. In current hardware acquisition practice, behavioral learning objectives are not established until about Milestone II (the Engineering Development decision point) at the NTPC. Usually, this precedes system acceptance by 3 years. Only 3 years are available in which to design and develop the device and to conduct the T&E. This is considerably less time than is available for conceptualizing, designing, and conducting T&E of operational hardware. Thus, managers tend to use device acquisition methods which save time irrespective of optimum efficiency.

The use of fleet and other support personnel and equipment for the T&E of hardware can be justified by the mission, by the cost, or by numbers of the equipment itself. Similar kinds of manpower and equipment for training device T&E is not so easily supported in the competition for these resources. The reason is that most often devices are acquired in small numbers, cost less, and provide only one means of instructional delivery.

SCOPE OF OPERATIONAL TEST AND EVALUATION. The application of OTE to training devices is simply an extension of existing technical testing. The extension is the application of operational considerations to the device in addition to presently required technical test and evaluation. Operational testing of training devices, however, is more limited in scope than that required for the operational testing of hardware. What is intended under OTE procedures is the determination of the training effectiveness and suitability of training device performance as it supports a training system in its intended training environment. OTE of a training device is not intended to, nor can it, measure how well the training system supports the transfer of training that may take place from the training system to the operational system. It is probable that findings related to areas other than device effectiveness (i.e., new training strategies) will result from OTE. Obviously, these findings are of importance to the training community and should be communicated. However, for purposes of device OTE, the evaluation is restricted to how well the device supports its program of training.

RDT&E SUPPORT. Training device development, generally, does not require Fleet RDT&E Support. Rather, this development effort requires support from activities

ashore; e.g., schools, ranges, and laboratories. Therefore, there should be the capability of requesting this support in a manner similar to requesting fleet support. The ashore support should be included in the DTEMP. In this manner, all parties involved are made aware of the requirement and can plan accordingly. As with existing practice, this support would necessitate CNO approval. In the proposed instruction, this requirement has led to the inclusion of two classes of RDT&E Support: Fleet and Other. Fleet RDT&E Support is provided by operational Naval forces, and Other RDT&E Support is provided by any command, activity, or agent not under the direct operational command of a fleet commander.

COMOPTEVFOR INVOLVEMENT. COMOPTEVFOR has stated that his mission is concerned with operational hardware and systems supplied to the operational forces. His responsibilities do not include training devices developed for use at shore installations. However, there are certain training devices which have been developed to interface directly with operational equipment, and stimulate this equipment for training purposes. Thus, any OTE of this class of device would have to be conducted in conjunction with operational equipment and could affect the operational capabilities of the system/equipment. To insure the device does have satisfactory operational suitability, it is proposed that these types of devices be tested and evaluated by COMOPTEVFOR with the educational and training expertise provided by CNET when requested. This would have the benefit of making requisite educational expertise available to COMOPTEVFOR without the necessity of augmenting the staff.

COORDINATION OF TRAINING DEVICE AND POM/BUDGET PROCESSES

Two separate POM/budget cycles must be considered in the acquisition process of training devices. R&D funding is used for initial unit or prototype development and includes provisions to support T&E requirements. These requirements specify the manpower, money, and facilities support needed to accomplish the test plan. Follow-on units are acquired using different funding, and this implies a need for sufficient early planning within individual resource sponsor POM/budgets to enable the timely acquisition of money. The coordination of fund expenditures from different sources necessitates maximum communication and interaction among all activities involved, and the T&E process that is established must provide for this need.

R&D FUNDING. R&D funding, which is mandated for specified devices meeting applicable criteria, covers a period in time from device initiation to "formal Navy acceptance of the device." No R&D monies will be allocated for device procurement following such acceptance, which is defined as coincident with ASU. This point is discussed subsequently under Integration of the Training Device Acquisition Process into the Overall System.

Existing procedures for the allocation of R&D monies parallel closely the procedures used to fund development of hardware systems and equipments. Because of this, specific explanation of the R&D budget cycle is not required here. The establishment of milestones for the reviews of program objective accomplishment occurs as a normal part of the R&D funding process. T&E budget requirements reflect T&E needs spelled out in the DTEMP and supporting documents and are closely tied to the established milestones and reviews. All usual stipulations for use of R&D monies will apply during prototype acquisition.

It is proposed that R&D budget submissions be made coincident with hardware/system milestone 1 for direct training device requirements. These submissions can be updated on an annual, or on an as occurring basis. Authority to expend would be granted when the decision is made that a new training device is required.

Indirect training device requirements present a problem with respect to funding. Recognition of the need for a device occurs when the requirement is identified. It is at this time that the budget submission would be made. Expenditure authority would occur at the same relative point in time as for direct requirements.

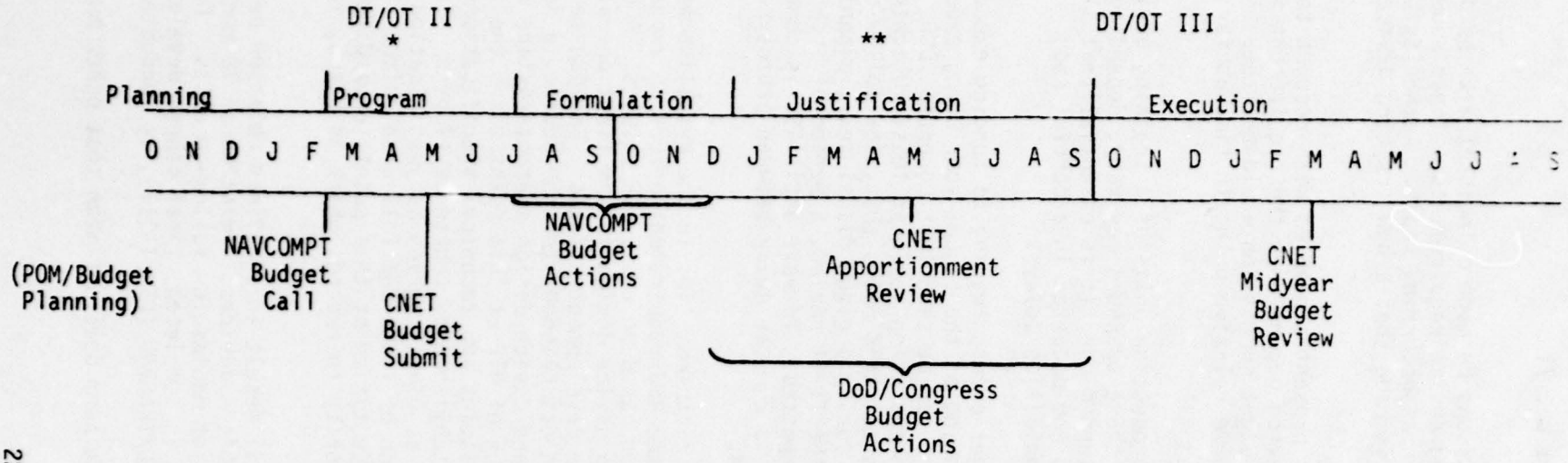
PRODUCTION UNIT FUNDING. The funding of production units of a training device is the responsibility of sponsors. While these sponsors may vary, depending on the type of training device and its intended use, it is essential that all training device follow-on units be planned and budgeted in a careful and timely fashion to preclude significant acquisition delays.

Figure 1 shows a general flow of budget events leading to funding execution for a fiscal year. Working from the beginning of the fiscal year being executed back to the initial NAVCOMP Budget Call, it can be seen that Congress, DOD, and NAVCOMPT reviews require that budget preparation begin at least 18 months before execution. Under normal circumstances, this means that, for follow-on units of a training device to be procured during a given fiscal year, planning for budget insertion must occur prior to the first review, a period of from 1½ to 2½ years prior to the time funds are expected. To wait until ASU is complete before budget insertion would create a 1½ to 2½ year delay between prototype and follow-on units, an unacceptable situation.

Resolution of the budget-acquisition dichotomy lies in the establishment of a policy which continues to recognize the ASU requirement before an expenditure authorization but allows a budget insertion based on early T&E results. A comparison of course objectives with the training device design is the first operational test associated with the course and device development efforts. For course development, JPMs/behavioral objectives have been established; for the device, a design freeze, or its equivalent, has occurred, and device design characteristics have been formally agreed upon. The application of OTE at this point takes the form of a review of projected device characteristics and technical specifications measured against behavioral objectives established by course developers. Satisfactory completion of this evaluation, identified as OT-II, serves as justification to insert budget entries requesting allocation of funds for follow-on units. It is emphasized that only budget insertion is justified at this point; expenditure of funds requires ASU, or a waiver, and authority to expend, which is based, in part, on completion of DT/OT-III.

The implementation of this policy will result in a defined relation between the budget and acquisition cycles. For DCAT A devices, a minimum of 18 months is required from DT/OT-II to availability of monies for follow-on units. During this period, prototype device procurement is completed, final course development is accomplished, and T&E, through TECHEVAL/TRAEVAL (DT/OT-III), is conducted.

The establishment of 18 months as the norm does not mean that other budget



* Normal Device Follow-on Budget Insertion Point

** Special Case Window for Follow-on Budget Insertion

Figure 1. Production Unit General Budget Cycle

"windows" are not available for follow-on unit insertion. In instances where the priority of the need for a particular training device is high enough to warrant deviation from the norm, current budget insertion "windows" occur later in the cycle and can be used to insert money into the budget for additional units. To illustrate, the CNET budget cycle normally includes an apportionment conference about 6 months prior to budget execution, during which, with justification, funds assigned to one project or program could be reallocated to accommodate some more pressing priority. In those instances of high priority, or time constraint, a procedure exists by which T&E can be waived as a requirement for the production decision. Such a waiver does not obviate the requirement for T&E; rather, it postpones it until some point after production has started.

One basic difficulty related to budget-acquisition integration remains and is presented as an issue for consideration in section V of this report. This difficulty involves the satisfaction of lead time requirements for MILCON funding where congressional approval is necessary. In most cases, 5 years has been stipulated as a minimum lead time for MILCON budget insertion. No solution to this difficulty has been found.

INTEGRATION OF THE TRAINING DEVICE ACQUISITION PROCESS INTO THE OVERALL SYSTEM

Since training devices are conceived, designed, developed, and procured to support a training course, it is logical to presume the existence of the course prior to device development. This is not always the case. However, for the OTE of training devices the existence of the course, or at least its behavioral objectives and evaluation criteria, is mandatory prior to the decision to procure.

The problem associated with the timing of the device funding and the POM/budget cycle must be accommodated. Coordination must be accomplished in such a way that inordinate delays are not encountered. Figure 2 is the recommended training system and training device process flow as it relates to hardware milestones and the budget process. The milestone events and the various stages of T&E are depicted at the approximate relative time they must occur if there is to be no delay.

The following paragraphs depict the events in figure 2 as they relate to a training device acquired to satisfy a direct requirement. Indirect requirements are established through a similar process, except that there is no consideration of hardware milestones. Rather, the training device milestones would be the critical, driving force.

Event 1: Identify Requirements. The requirements for a new training device can come from a variety of sources. For example, within the NAVEDTRACOM, school or support personnel may identify such requirements. Outside of the training establishment, fleet personnel may initiate ideas. Whatever the source, training device requirements can be grouped into one of two categories:

- those required to support new or modified/revised learning requirements, necessitating the developing of new course/behavioral objectives
- those which support a continuing training system.

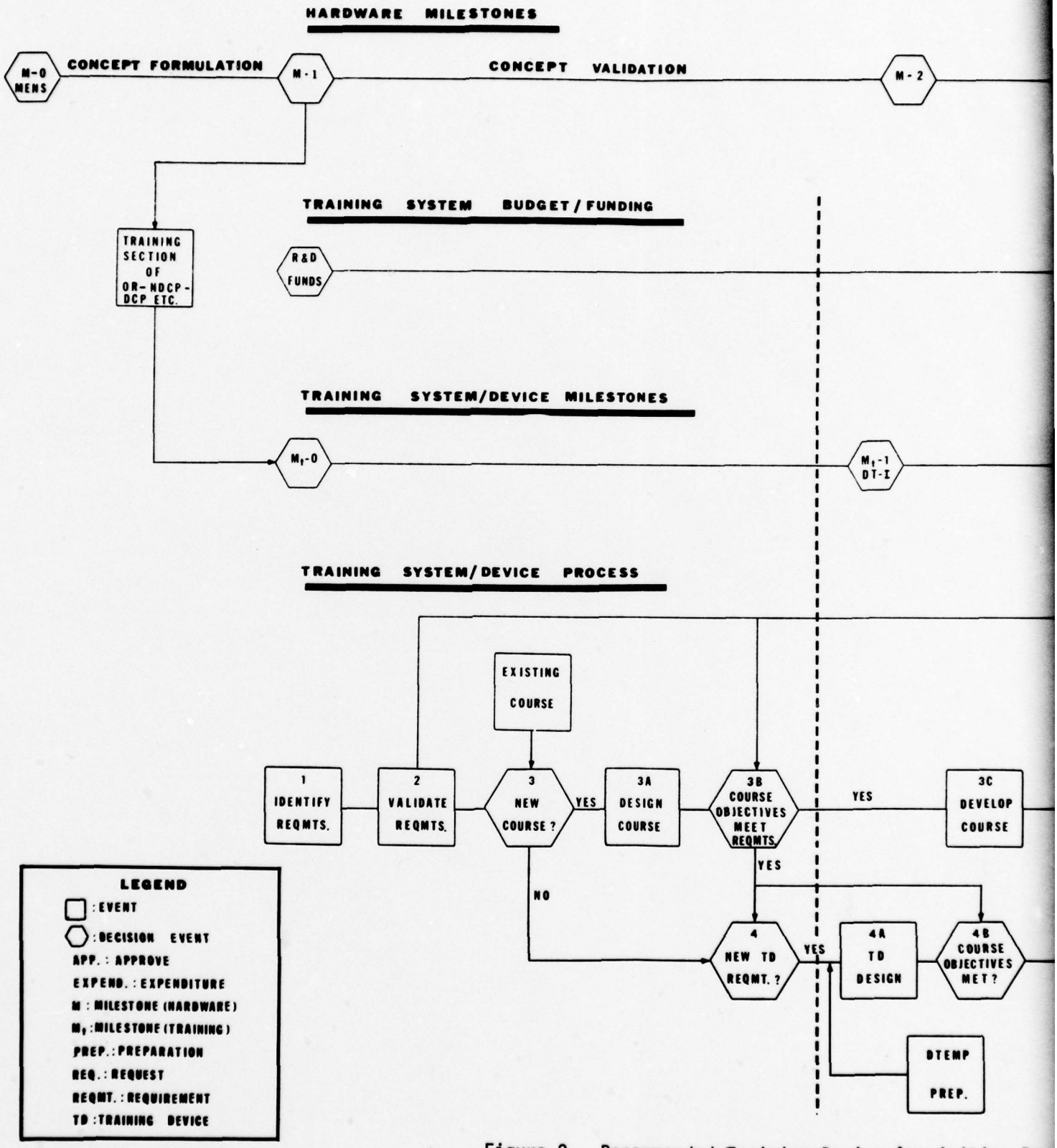
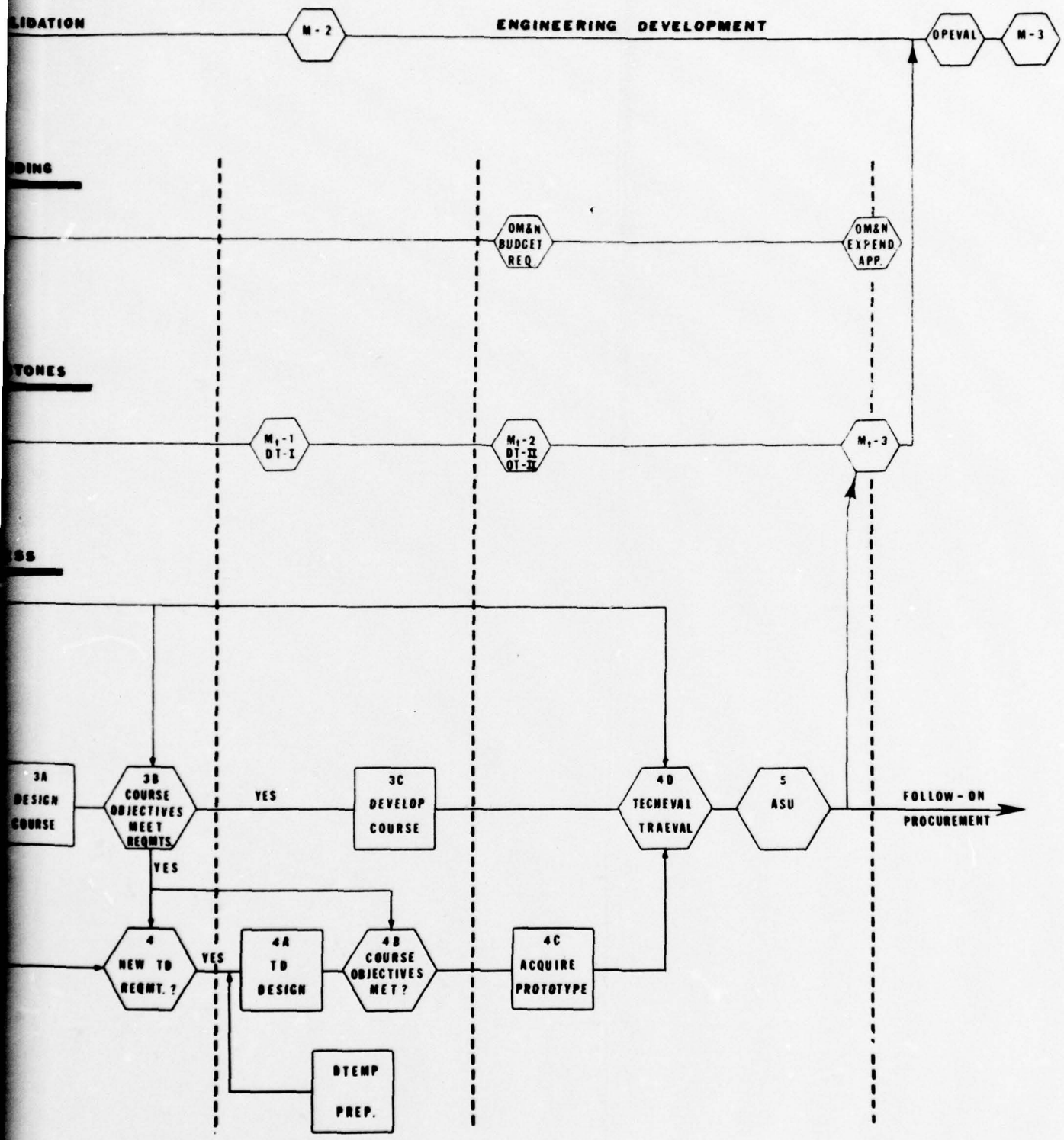


Figure 2. Recommended Training Device Acquisition Pro



commended Training Device Acquisition Process

Within the acquisition flow, the identification of requirements provides the first step in the T&E process in that requirements provide the criteria against which the effectiveness of the device will eventually be measured.

The identification of the training requirement is a natural result of hardware milestone 1 and should compel the Resource Sponsor to make a preliminary identification of RDT&E funds which may be needed in the acquisition of a prototype training device. This is milestone 0 for the training system and device.

Event 2: Requirements Validation. In addition to actually verifying a training support need that may, or may not, include a training device, actions accomplished during this event serve to identify those commands and activities which will be involved in the acquisition.

Event 3: New Courses/Behavioral Objectives Decision Point. This event determines the level of course development effort required to establish evaluation criteria. If a new course is necessary, the design and development effort continues through events 3A, 3B, and 3C of figure 2. If not, the process proceeds to event 4, with agreement among all concerned that existing behavioral objectives will suffice to define the training requirements against which a new device may be acquired and evaluated.

The three events related to course development are not all the actions required to fully implement a new program of study. However, for a discussion of T&E, these three events provide the essential framework for the test and evaluation of training devices developed to support the course.

Assuming the need for a new course or the formulation of new behavioral objectives, course design (event 3A) is taken to the point that an initial review of the objectives can be conducted to verify that they satisfy validated fleet training requirements (event 2). Whether an Instructional Systems Development (ISD) or another process is used as a guide, it is at this point that initial behavioral objectives with JPMs must be developed for comparison with the validated requirement (event 3B). These objectives with JPMs serve as the criteria against which a preliminary design of the training device can be reviewed (event 4B) at some later time. Timing of the development of initial objectives is important as the review (event 4B) must occur at or before the DT/OT-II point in the T&E cycle.

A satisfactory result from this preliminary course evaluation (event 3B) leads to continuation and completion of the course development effort (event 3C). Course development is not tied to the training device acquisition or T&E cycle other than that course completion must occur before OT-III of the device.

Event 4: Training Device Decision Point. This event initiates the actual acquisition cycle for the device. In addition to this critical feature, its position in the acquisition cycle is critical; i.e., after the course decision has been made. This positioning serves to highlight the supportive nature of a device in the training system. The decision to acquire a new training device leads to the acquisition events (events 4A through 4D) involved in that process.

For I&L, another crucial result of an affirmative decision to acquire a device (event 4) is the requirement to initiate appropriate documentation. Of greatest importance is the DTEMP, the primary coordination document for the T&E process. The DTEMP includes a preliminary statement of what T&E is required, estimates the resources required to support the T&E, establishes time schedules, and confirms the specific assignments of personnel and activities involved, to include RDT&E Support. Initial evaluation criteria for both development and operational tests are specified. The DTEMP is initiated as early in the training device acquisition process as possible.

Within the training device acquisition process (events 4A-4D), the two decision points (events 4B and 4D) are most important from the perspective of T&E. The first of these (event 4B) represents that point in the acquisition cycle when the device reaches contract design freeze or its equivalent. Design work on the proposed device has reached the stage where further changes will be minimal, and proposed device operating characteristics and specifications can be evaluated against the initial behavioral objectives and JPMs. This evaluation (DT/OT-II) is a paper analysis and results in a report which, assuming that the results are satisfactory, provides the justification for insertion of follow-on unit requirements into the appropriate budget.

The second decision point identified in this flow (event 4D) is the final major T&E event. At this point, the prototype device is tested against the criteria provided by the fully developed course objectives and the results evaluated in terms of the validated requirements (event 2). Event 4D is DT/OT-III, TECHEVAL/TRAEVAL, the major T&E event that occurs during any device acquisition process, and it provides a major input to the ASU decision (event 5).

The training system is now available to the hardware developers for use in initial training of the individuals assigned to conduct the OPEVAL/TECHEVAL of the hardware. Thus the effectiveness of the system can be verified in the actual operational hardware environment.

Event 5: Approval for Service Use Decision Point. The ASU event is the final verification that the device meets operational needs prior to expenditure of funds for follow-on units. As in hardware acquisition, it is a prerequisite to the production decision. ASU depends on a variety of inputs, including the results of DT/OT-III. Although funds for follow-on units were inserted in the budget at DT/OT-II, no authority to expend had been given. ASU, or a waiver as provided in the proposed OPNAV instruction enables the Acquisition or Resource Sponsor to authorize the expenditure of budgeted funds at the third device milestone (M_t-3).

The major T&E events of training device acquisition have been designed to flow smoothly from one event to the next providing ample opportunity for coordination among responsible commands. The events are mutually supportive. Although each event in figure 2 is identified separately, it is probable that many events will occur simultaneously. For example, the Validation of Requirements (event 2), the New Course Decision Point (event 3), and the Training Device Decision Point (event 4), could occur as a result of decisions reached at a single convened conference. Additionally, the development of a new/revised course and the acquisition of the prototype device could occur during the same

period of time. Specific coordination efforts would be required among course and device development personnel to ensure that the elements needed for test and evaluation are accomplished in a timely fashion.

SECTION V

POLICY ISSUES FOR CNET CONSIDERATION

During the development of the proposed instruction on Test and Evaluation of Training Devices, major questions of policy and procedure were raised, the resolution of which required the experienced judgment of professionals representing involved commands. Where appropriate, opinions and recommendations were solicited from persons at these activities. These responses were considered in arriving at the specific recommendations made in the proposed instruction. Nevertheless, the policies and procedures recommended require the concurrence and/or approval of commands responsible for them.

This section presents those issues raised for consideration and approval. Amplifying remarks are included to highlight factors affecting any specific issue.

Issue No. 1. Training devices will be acquired using as nearly as possible the same criteria as operational systems and operational hardware.

Acceptance of this premise will require an extensive course development effort prior to the decision to acquire a training device. As a corollary to this acceptance, the formal inclusion of training command representatives will be required much earlier in operational systems acquisitions than is presently the case.

Issue No. 2. The DCAT categorization is necessary to insure, within existing policy, that the acquisition of training devices is managed by a command with the requisite expertise, and that the conduct of an independent OTE is restricted only to devices of major impact.

It is not necessarily efficient, or cost effective, to faithfully simulate operational equipment for training. Since good training decisions on fidelity of simulation and the extent of simulation require considerable skills and experience, the management control of the device acquisition, particularly design, should reside with the training experts. The criteria for using RDT&E funds for prototype development are identical for expensive devices and for inexpensive devices. It is not necessary to conduct independent OTEs of comparatively minor, inexpensive training devices, particularly since the cost of these evaluations in terms of time and resources could exceed device cost.

Issue No. 3. Assign CNET the responsibility for the management of the conduct of OTE for training devices and for the appointment of an OTA within the Training Command.

This concept results from the nature, use, and location of training devices. There is no existing organization staffed with adequate numbers of educational specialists whose mission includes the conduct of the OTE of training devices. The logical location of such an agent is within the command where the majority of training experts are located. Acceptance of this concept has two major advantages.

1. It retains the OTA's independence and the OPNAV approval authority for the conduct of OTE.

2. It precludes the need for augmenting the COMOPTEVFOR staff and expanding his mission.

Issue No. 4. Differentiate between Fleet and Other RDT&E Support for the development of training programs and the conduct of training device OTE.

Training devices are designed in a nonoperational environment. Research support for programs supported by training devices is generally required from the shore establishment rather than the fleet. The provision for two types of intercommand RDT&E support, Fleet and Other, permits a controlled method for obtaining the requisite support through a single coordinating agent.

Issue No. 5. Retain COMOPTEVFOR involvement in the T&E of training devices which interface directly with hardware installed on operating units.

This is the most reliable method of insuring that the device does not affect operational capabilities.

Issue No. 6. Define OTE limits to a measurement of training device effectiveness only in terms of course behavioral objectives and stipulated course requirements.

Even where possible, it is expensive in terms of time and resources to determine transfer of training to the operational setting. OTE results will be reported only with respect to how well the device supports its training program.

Issue No. 7. There is a need to input to the ASU decision making process a cost effectiveness recommendation for training devices. An agent must be assigned this responsibility.

A training device evaluation is not complete until a cost comparison is made, where feasible, of the life cycle costs of existing training devices and their training effectiveness with the life cycle costs of the new device and its training effectiveness. The results should be one input to the decision to acquire additional devices. The issue generated by this requirement is which agent should perform the evaluation, the DA, the OTA, or an independent agent.

Issue No. 8. Convene a conference to prepare the proposed instruction for CNO release.

Attendees at this conference should include representatives of the following commands and agencies: CNO (OP-01, OP-02, OP-03, OP-04, OP-05, OP-096, OP-098), Comptroller of the Navy, CNM, CNET, COMOPTEVFOR, CNTECHTRA, CNATRA, TAEG, and NAVTRAEQUIPCEN.

Issue No. 9. Coordination is needed to relate the MILCON budget cycle to the device acquisition process.

MILCON funding currently requires a 5-year planning cycle. Training device planning seldom extends beyond a 3- to 4-year period for the prototype

and 1½ to 2 years for production units. This timing problem has not been resolved in the present study.

APPENDIX A

PROPOSED OPNAV INSTRUCTION
TEST AND EVALUATION OF TRAINING DEVICES

PROPOSED OPNAV INSTRUCTION

OPNAV INSTRUCTION

From: Chief of Naval Operations
Subj: Test and Evaluation of Training Devices

Ref: (a) DOD Directive 5000.1
(b) DOD Directive 5000.3
(c) SECNAVINST 5000.1
(d) OPNAVINST 3960.10
(e) OPNAVINST 4720.9D

Encl: (1) Certification of Readiness for TRAEVAL
(2) Device Test and Evaluation Master Plan (DTEMP)
(3) Requests for RDT&E Support
(4) Reports Symbols

1. Purpose. This instruction:

a. Implements policy established by reference (c) within the Navy for training devices acquired with RDT&E funds.

b. Establishes the method for conducting test and evaluation (T&E) in Navy acquisition programs for training aids and devices.

c. Defines the T&E responsibilities of CNO, Director RDT&E, Resource and Assessment Sponsors, CHNAVMAT, Developing Agencies (DA), Operational Test Agencies (OTA), and fleet commanders.

d. Establishes procedures for planning, conducting, and reporting T&E.

e. Establishes the relationship between development T&E (DTE) and operational T&E (OTE) agents.

f. Establishes procedures and format for Device Test and Evaluation Master Plans (DTEMP).

g. Establishes procedures for obtaining Fleet or Other unit RDT&E Support for R&D that is not part of an acquisition program.

2. Background. Department of Defense (DOD) policy for defense systems acquisition was established by references (a) and (b) and implemented within the Navy by reference (c). Reference (d) is the implementing document for this policy as it affects operational systems. This instruction is the implementing document for Navy training device acquisition and parallels reference (d) insofar as possible. No change to the basic DOD policy is intended. The key element of DOD acquisition policy affecting T&E is that "Programs shall be structured and resources allocated to ensure that the actual achievement of program objectives is the pacing function." T&E is a principal tool used to demonstrate the achievement of program objectives. T&E is mandatory in all procurements for which first item acquisition was accomplished using research funds.

3. Scope and Applicability. This instruction applies to all Navy training device acquisition programs, whether they are independent programs or are related to a specific system or hardware, except nuclear weapon subsystems or nuclear propulsion subsystems. Nuclear subsystems are governed by joint DOD and ERDA agreements. In addition, this instruction applies to programs requiring major modifications to training devices.

Training devices that employ new or off-the-shelf computers and systems components, but have training system unique software and interface components, will be developed and procured with RDT&E funds. The initial or prototype system and all of its support costs through service acceptance will be funded in RDT&E. RDT&E will not fund beyond the initial system unless more than one full system is required to demonstrate that the training device meets all effectiveness and supportability objectives.

4. Definitions.

a. Training device. The hardware and software which has been designed, or modified, exclusively for training purposes, and which usually involves to some degree simulation or stimulation in its construction or operation, so as to demonstrate or illustrate a concept or simulate an operational circumstance or environment.

b. Training effectiveness is the relationship of the improvement demonstrated by persons subsequent to the completion of a training experience compared to the capabilities demonstrated by a similar group performing to identical criteria who have not had the training experience. This relationship can be positive, which indicates the training experience was effective, or it can be zero or negative, which indicates the training experience was not effective. Training effectiveness can be measured objectively, subjectively, or in some combination. For a training device, student performance is compared to the training system's stated goals for the device.

c. Major Modification. Any change in design in hardware or software to existing training device or operational hardware or a system which alters substantially the operational, training, logistics, or other characteristics. This includes reliability and maintainability characteristics.

d. Service acceptance. The situation wherein a training device has been tested and documented in accordance with reference (e), and has been certified as approved, or provisionally approved, for service use.

5. Device Acquisition Categories. Four acquisition categories (ACATs) are established to govern acquisition procedures. These ACATs and their controlling documents are defined in reference (d). Table 1 is a summary of the ACATs.

TABLE 1. ACQUISITION CATEGORIES

ACAT	DESIGNATED BY	NOMINAL DOLLAR VALUE THRESHOLD		OTHER CRITERIA
		RDT&E	PRODUCTION	
I	SECDEF OR DEPSECDEF	$50M	$200M	Lesser Programs designated by SECDEF or DEPSECDEF.
II	DSARC principal, SECNAV, or CNO	$20M	$ 50M	Lesser programs recommended by CHNAVMAT, OP-090, OP-098, or program sponsor (DCNO/DMSO).
III*	Program Sponsor	$ 5M	$ 20M	Lesser programs recommended by CHNAVMAT, OP-090, OP-098, or DA.
IV*	CHNAVMAT/CNET			Includes all programs not designated ACAT-I, II, or III.

*Programs below the ACAT-III dollar threshold will normally be designated ACAT-III if they:

a. directly affect the military characteristics of ships, aircraft, or other combatant units; or

b. require OTE to support key program decisions; or

c. require RDT&E support.

The majority of training devices fall in ACAT-III or IV. Many ACAT-IV devices are designated as ACAT-III for other reasons. Moreover, not all device acquisition programs require the same level of attention, or the same degree of T&E. Therefore, within the ACAT-III and ACAT-IV categories, three device categories (DCAT) are established to govern the acquisition process, to include T&E. With respect to T&E, all training device acquisition programs require a DTE, whereas only those programs designated DCAT A or B require an independent OTE. Table 2 is a summary of the proposed DCATs.

TABLE 2. DEVICE CATEGORIES

DCAT	DESIGNATED BY	NOMINAL DOLLAR VALUE THRESHOLDS		CRITERIA
		RDT&E	PRODUCTION	
A*	Assessment Sponsor	$1.5M	$ 5M	Other programs recommended by CNET, OP-098, or DA.
B	Assessment Sponsor			Training devices which interface directly with operational systems and require OTE with that system.
C*	CNET			All programs not designated DCAT-A or B.

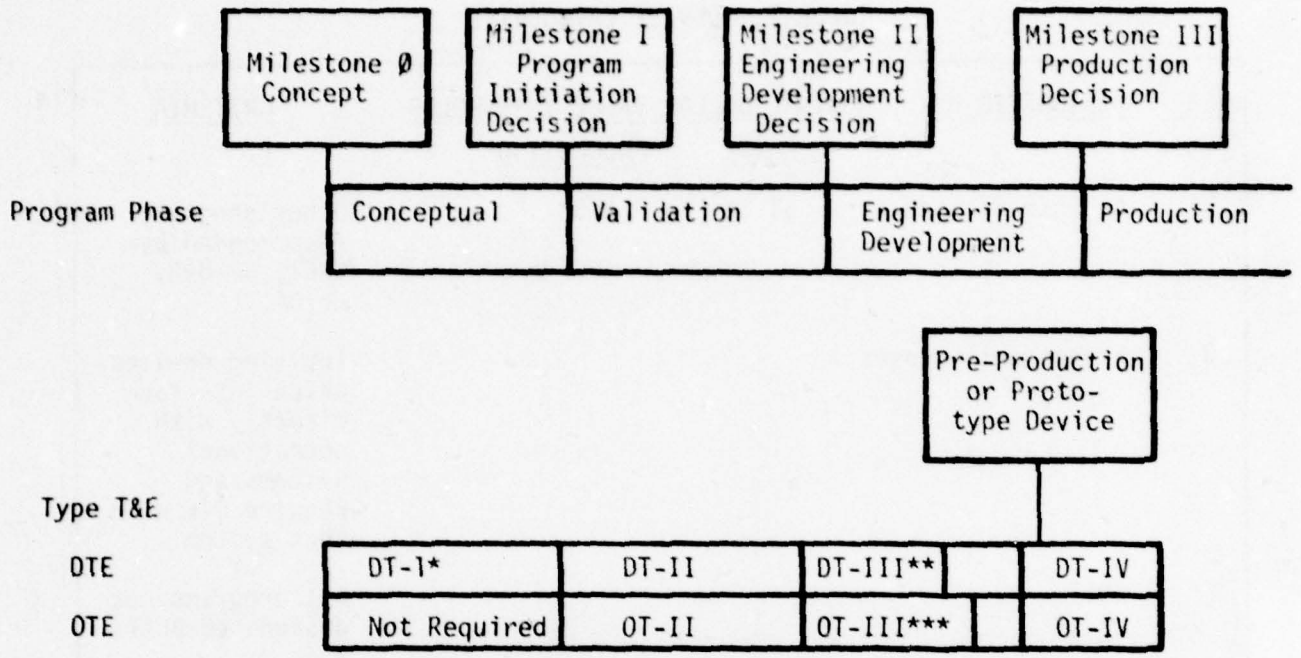
*Programs below the DCAT-A dollar threshold will normally be designated DCAT-A if they:

a. require an independent OTE to support key program decisions, or

b. require Fleet or Other RDT&E Support.

6. Navy T&E Policy. The Navy T&E policy is the same as that of reference (b). This instruction does not repeat this policy, thus direct reference to reference (b) is required.

7. Types of T&E. There are two types of T&E--DTE and OTE. The authority for conducting each is delegated to a different organization. Phasing of training device T&E is shown in figure 1 and described in subsequent paragraphs.



* Not Required for Most Training Device Acquisition Programs
** Technical Evaluation (TECHEVAL)
*** Training Effectiveness Evaluation (TRAEVAL)

Figure 1. T&E Phases

a. DTE. DTE is defined in reference (b). The DA is responsible for DTE. The DA for training devices is a CNET designated command, a systems command, or a CHNAVMAT-designated project manager assigned the responsibility for the total acquisition program. The DA is usually designated at Milestone 0. DTE is planned by, conducted by or for, monitored by, and reported by the DA. The DA shall establish early and continuing liaison with the OTA to insure that the DTE program is fully understood and that OTE requirements are identified and integrated into the program schedule with proper budgeting. The DA shall provide the OTA with all significant DTE test data and analyses that will assist in the planning and interpreting of OTE. DTE test data indicating failures or anomalies will be provided as rapidly as possible to the Assessment Sponsor and OTA.

(1) DTE is required for all acquisition progams in all four ACATs and all three DCATs.

(2) DTE is conducted in four major phases. The specific objectives of each phase and each subphase of DTE are developed by the DA and published in the DTEMP.

(a) DT-I is the DTE which may be conducted during the conceptual phase to support the program initiation decision. Most device acquisition programs do not require DT-I. However, when required, it will normally consist of

concept evaluations and trade-off analyses. Design risks and alternative solutions are identified when the DT-I is conducted.

(b) DT-II is that DTE conducted during the validation phase to support the full scale development (Engineering) decision. It demonstrates that the design risks have been minimized and that the most cost and training effective solution is selected. It is normally conducted at the subsystem/component level, up to and including employment of engineering models/brassboards for final evaluation.

(c) DT-III is that DTE conducted during the full scale development phase to support the first major production decision. The first major production decision is that first decision to produce systems for permanent installation or use, or for inventory. It follows approval, or provisional approval for service use, or the granting of a waiver of approval for service use. DT-III demonstrates that the engineering design meets performance, reliability, maintainability, supportability, environmental compatibility, and system safety requirements. Subphases of DT-III may include contractor evaluations and tests, formal Naval acceptance tests, and the like. The final phase of DT-III is TECHEVAL, the purpose of which is to certify that the device meets specified technical requirements and is ready for a Training Effectiveness Evaluation (TRAEVAL). Enclosure (1) contains instructions for certification of readiness for TRAEVAL.

(d) DT-IV is that DTE conducted after the first major production decision on a production unit to verify that product improvement or correction of design deficiencies discovered during prior testing or operational use have been effectively completed.

(3) DTE may be divided into subphases (e.g., DT-IIIA, DT-IIIB, etc.), as necessary.

(4) The OTA shall monitor all pertinent phases of DTE. OTA comments shall be included with all reported DTE events.

b. Operational Test and Evaluation (OTE). OTE is defined in reference (b). The Navy is required to have one organization, separate and distinct from the developing and procuring command and from the using command, which will be responsible for all OTE. For operational hardware and systems this agency is Commander, Operational Test and Evaluation Force (COMOPTEVFOR). Because of the nature of training devices, the special character of their use, and, consequently, the special concern with the operational testing to which they are subjected, the Chief of Naval Education and Training (CNET) is designated the Navy organization responsible for the OTE of all training devices which require an independent OTE. OTE authority, with the approval of OP-098, will be designated to a command which is independent of the developing, procuring, and using command. Designation of the OTA will occur at the same time as the designation of the DA to facilitate coordination. The OTA will provide the DA with all major OTE requirements, test data, and analyses. When the test data indicate failures or anomalies, they will be provided as rapidly as possible to the Assessment Sponsor and the DA.

(1) OTE is required for all ACAT-I and II and ACAT-III and IV (DCAT-A and B) programs. OTE is not required for DCAT-C programs regardless of the ACAT.

(2) OTE is divided into two major categories: Initial OTE (IOTE), which is all OTE prior to the first major production decision, and Follow-on OTE (FOTE), which is all OTE subsequent to the first major production decision. OTE is further divided into five major phases of which the first three are IOTE and the last two FOTE. The specific objectives of each phase of OTE are developed by the OTA and are published in the DTEMP.

(a) OT-I is not required in training device acquisition programs.

(b) OT-II is that IOTE conducted during the validation phase to support the full-scale development decision. The objectives of OT-II are to provide an early estimate of projected training effectiveness and the operational suitability of the device within its designed training system, estimate program progress, review the training and cost effectiveness, and identify issues for OT-III. Training device hardware is usually not available for OT-II. It will usually be a comparative evaluation of the operational requirements against behavioral objectives and the training device design capabilities, as proposed, to insure all course objectives for which the device is to be used in training are met to the required degree. Since the results of OT-II will have a pervasive effect on the final device design, close coordination is required between the OTA and the DA.

(c) OT-III is that IOTE conducted during the full-scale development phase to support the first major production decision. TRAEVAL is the final subphase of OT-III. Specific OT-III objectives include a demonstration of the achievement of program objectives for the training effectiveness and operational suitability, the cost effectiveness, and the environmental characteristics of the device. TRAEVAL normally uses prototype production hardware, and begins as soon as the DA notifies the OTA that the device is ready for TRAEVAL. The first major production decision should not be scheduled sooner than 2 months after completion of TRAEVAL testing.

(d) FOTE may not be required in all acquisition programs. The need for FOTE is determined by the OTA on a case-by-case basis.

(e) OT-IV is that FOTE conducted after the first major production decision, but before production systems are available for testing. Normally, OT-IV is conducted with the same preproduction prototype or first production system(s) used in TRAEVAL. Specific OT-IV objectives include the testing of corrective changes to hardware and software to be incorporated in production systems, and the completion of any deferred or incomplete IOTE.

(f) OT-V is that FOTE conducted on production devices as soon as they are available. A specific objective of OT-V is the demonstration of the achievement of program objectives for production system training effectiveness and operational suitability. Other OT-V objectives may include an OTE of the system in a new environment, or in new applications.

8. Device Test and Evaluation Master Plan (DTEMP). The DTEMP is the controlling management document for training device T&E. It defines the test and evaluation required for training device acquisition programs acquired with RDT&E funds, except as noted below. It contains the integrated testing requirements of the DA (for DTE) and the OTA (for OTE), the initial schedule of events, and all resources estimated to be required for T&E accomplishment.

a. CNO approved DTEMPs are required for all ACAT-I, II, III (DCAT-A and B) and IV (DCAT-A and B) programs. For DCAT-C training device acquisition programs, CNET will promulgate instructions for the preparation and promulgation of T&E plans. T&E plans for DCAT-C programs will not be referred to as DTEMPs.

b. The DTEMP will be prepared early in each new training device acquisition program and approved by CNO (OP-098) prior to Milestone 1. The initial version of the DTEMP will lack many specifics. Revisions based on reviews and development of technical data will add detail as developed.

c. The DTEMP will be prepared by the DA in cooperation with the OTA. The OTE portions of the DTEMP will be prepared by the OTA. The DA shall insure that the DTEMP accurately reflects the planned approach to provide necessary T&E to solve design issues. Enclosure (2) contains instructions for DTEMP preparation.

d. The DTEMP (and major revisions thereto) will be submitted by the DA to the Assessment Sponsor, via CNET and OP-098, for approval. Where complete agreement between the DA and the OTA on the proposed plan cannot be obtained prior to submission to CNET, the DA will state, in writing, the areas of disagreement and his reasons therefore, with a copy to the OTA. The OTA shall provide, in writing, the rationale for the need to accomplish the tests, to follow the described procedures, and/or the need for stipulated resources that appear to be in disagreement with the DA's planned approach. In order to insure standard format and procedures, OP-098 will draft and staff any CNO revisions of DTEMPs. In case of disagreement between CNET, OP-098, and the Acquisition/Resource Sponsor, resolution will be requested of OP-090 and the VCNO, in that order.

e. Approval of the DTEMP, or revisions thereto, constitutes CNO direction to conduct the T&E program defined therein, including the commitment of RDT&E Support, other command support, and the expenditure of resources. Test plans will be drawn up directly from the DTEMP by the DA for DTE and production acceptance test and evaluation, and by the OTA for OTE. These test plans will be consistent with the DTEMP and adequate to carry out its provisions.

f. The DTEMP will be reviewed by the DA and OTA as often as necessary, but not less than annually and about 2 months prior to each major decision milestone. Based on these reviews, the DTEMP will be updated or revised, as necessary, to incorporate significant results achieved and changes to plans and milestones. The reasons for all changes will be documented.

g. Minor changes to the DTEMP may be made by the DA (for DTE) or the OTA (for OTE) without CNO approval. RDT&E Support changes are never considered minor. For minor changes the DA or OTA shall advise the Assessment Sponsor in writing of the change and the rationale as to why it is required. A copy of this letter shall be provided to OP-098, CNET, the Resource Sponsor, and to the OTA or DA.

h. DTEMPs for Navy led joint service developments and training device acquisition programs will be prepared in active and close coordination with the other participating service(s). They will be approved jointly by CNO and the military chief(s) of the other participating service(s).

i. The DTEMP shall be retired upon the completion of the last phase of OTE.

9. Special T&E Situations. There are several types of programs or occurrences in which special T&E situations may exist. These programs are discussed in the following paragraphs.

a. OPTEVFOR Involvement. As shown in table 2, training device acquisition programs designated ACAT-III and IV, DCAT-B, are those which interface directly with operational systems or hardware and, therefore, could affect the operational capabilities of the equipment. These devices must be tested operationally with the operational system to insure their operational suitability. The OTA for these training devices shall be COMOPTEVFOR. Testing management procedures as stipulated in this instruction shall apply. When requested, educational and training expertise shall be provided to COMOPTEVFOR by CNET.

b. Combined Testing. The policy established in reference (b) will be adhered to in combined development and operational testing.

c. Test and Evaluation Coordinating Group (TECG). Complex, many-faceted programs may require extensive T&E coordination. To facilitate this, a TECG may be established by the Assessment Sponsor. Membership in the TECG should include the Assessment Sponsor, Resources Sponsor, OP-102, OP-983, CNET, DA, OTA, fleet representatives, and others, as appropriate. The TECG shall meet at the direction of the chairman who shall be the Assessment Sponsor. TECG recommendations will be considered for inclusion in the DTEMP.

d. Deficiency Reports. If, for any reason, OTE is unlikely to be successfully or efficiently prosecuted, the OTA will transmit by message a "Deficiency Report" to CNO, CNET, and the DA, and will suspend OTE. This will be followed by a letter report which outlines the problem, a proposed solution, and a proposed revised schedule for OTE.

e. OTE Support for USMC. When the Commandant of the Marine Corps (CMC) desires OTE support for training devices, he will request such support from CNO who will direct CNET to provide the approved support. All such OTE accomplished will be planned, conducted, and reported in accordance with this instruction, except that OTE planning will be coordinated with CMC, and the OTA will report his independent tests and evaluations to both CNO and CMC.

f. Joint Test and Evaluation (JTE). JTE is that T&E conducted by two or more participating services. There are two types of JTE:

(1) Service initiated JTE in joint development and acquisition programs. All such JTE of training devices for which the Navy is the lead service will be planned, accomplished, and reported in accordance with reference (b) and this instruction, unless otherwise directed.

(2) Deputy Director, Test and Evaluation (DDT&E) initiated JTE is initiated and coordinated by DDT&E, with eventual specific delegation to one of the services of all practical aspects of the JTE. Prior to assignment to a service, OP-098 and CNET will serve as Navy points of contact for DDT&E on training device JTE matters.

g. Waivers of T&E.

(1) Any waiver of the accomplishment of T&E outlined in the Decision Coordinating Paper (DCP) for an ACAT-I program will be granted only by SECDEF.

(2) Any waiver of the accomplishment of T&E outlined in the Program Memorandum/Navy DCP (PM/NDCP) for an ACAT-II program will be granted only by SECNAV, Under SECNAV, or an ASN designated by SECNAV.

(3) Any waiver of accomplishment of other T&E outlined in an approved DTEMP will be granted only by CNO for ACAT-I programs and by OP-098 for ACAT-II and III programs.

(4) In the event T&E would cause a delay in obtaining required training devices such that operational capabilities could be degraded, a request for a waiver of the T&E requirement prior to the obligation of funds for obtaining production units will be submitted to OP-098 via CNET and the Assessment Sponsor. The request shall contain the reason the waiver is needed in terms of how it will impact operational capabilities and the number of units required. Granting of the waiver does not eliminate the requirement for T&E. Rather it authorizes the acquisition of a limited number of devices pending the outcome of T&E.

10. RDT&E Support. There are two categories of RDT&E Support available to the test agencies. Fleet RDT&E Support is that support provided by fleet operational units and personnel. Other RDT&E Support is any support provided by units or personnel not under an operational commander.

a. Fleet RDT&E Support. This term encompasses the operating and non-operating support provided: by operational naval forces having a primary mission other than R&D; to the DA, OTA, or an R&D agency; for the accomplishment of acquisition program T&E, or research and development not related to specific acquisition programs. There are three types of Fleet RDT&E Support: dedicated support precludes employment of the supporting unit in other missions; concurrent support permits employment of the supporting unit in activities other than RDT&E Support, but will have an operational impact upon the unit's employment; and NIB (not-to-interfere-basis) support permits employment of the supporting unit without interference from the RDT&E effort.

(1) Fleet RDT&E Support requirements are compiled from three inputs:

(a) Approved Test and Evaluation Master Plans (TEMP) for ACAT-I, II, and III programs.

(b) Approved DTEMPs for ACAT-I and II, and ACAT III and V (DCAT-A and B) programs.

(c) Requests for Fleet RDT&E Support for R&D not related to specific acquisition programs will be submitted to CNO for approval by the R&D agency. See enclosure (3) for instructions.

(2) From these three inputs, CNO (OP-098) will compile and publish, annually, "CNO Long-Range Fleet RDT&E Support Requirements" for the budget- and out-years. Fleet commanders will use this report for guidance in planning, programming, and budgeting for Fleet RDT&E Support.

(3) Using these same inputs, updated by confirmation procedures, CNO (OP-098) will compile and publish, quarterly, "CNO Quarterly Fleet RDT&E Support Requirements" for the forthcoming quarter. This summary will be used at quarterly fleet scheduling conferences to establish the requirements for Fleet RDT&E Support.

(4) CNO (OP-098) will assign a priority (applying to fleet support only) to each Fleet RDT&E Support task listed in the CNO Quarterly Fleet RDT&E Support Requirements.

(a) Priority ONE support tasks take precedence over normal fleet operations.

(b) Priority TWO support tasks take precedence with normal fleet operations.

(c) Priority THREE support tasks take precedence after normal fleet operations.

The determining factor in the assignment of priorities will be the urgency of maintaining the RDT&E schedule. The priorities do not necessarily have a direct relationship to the importance of the program supported. The type of support (dedicated, concurrent, or NIB) is not considered in determining priority.

(5) Fleet commanders in chief will schedule support tasks listed in the CNO Quarterly Fleet RDT&E Support Requirements in accordance with assigned priorities. The OTA will coordinate Fleet RDT&E Support scheduling for CNO and will report to CNO, quarterly, the Fleet RDT&E Support provided.

(6) Fleet commanders in chief are requested to provide any assistance required by the OTA in the prosecution of CNO-approved programs.

(7) Fleet RDT&E Support will not be provided except in accordance with the provisions of this instruction.

b. Other RDT&E Support. This term encompasses the operating and non-operating support provided: by any command, activity, or agent not under the direct operational command of a fleet commander and having a primary mission other than R&D; to the DA, OTA, or an R&D agency; for the accomplishment of acquisition program T&E, or research and development not related to a specific training device acquisition program. The three types of R&D support; i.e., dedicated, concurrent, and NIB, are applicable to Other RDT&E Support.

(1) Other RDT&E Support requirements are compiled from two inputs:

(a) Approved DTEMPs for ACAT-I and II and ACAT-III and IV (DCAT-A and B) programs.

(b) Requests for Other RDT&E Support for R&D not related to specific training device acquisition programs which have been approved by CNO. See enclosure (3) for instructions.

(2) From these two inputs, CNO (OP-098) will compile and publish, annually, the "CNO Long-Range Other RDT&E Support Requirments" for the budget- and out-years. This report will be used for guidance in planning, programming, and budgeting for Other RDT&E Support.

(3) CNO (OP-098) will assign a priority to each Other RDT&E Support task listed in the CNO Long-Range Other RDT&E Support Requirements.

(a) Priority ONE support tasks take precedence over normal functions.

(b) Priority TWO support tasks take precedence with normal functions.

(c) Priority THREE support tasks take precedence after normal functions.

The determining factor in the assignment of priorities will be the urgency of maintaining the R&D schedule. The priorities do not necessarily have a direct relationship to the importance of the program supported. The type of support (dedicated, concurrent, or NIB) is not considered in assigning priorities.

(4) Support tasks will be scheduled as listed in the CNO Long-Range Other RDT&E Support Requirements in accordance with assigned priorities. For training device acquisition programs, the OTA will coordinate Other RDT&E Support scheduling for CNO. In R&D programs which are not related to a specific acquisition, the DA will coordinate Other RDT&E Support scheduling for CNO. A quarterly report will be submitted to CNO of Other RDT&E Support provided. Negative reports are not required.

11. T&E Funding Responsibility.

a. The DA will plan, program, budget, and fund the cost of all resources identified in the approved DTEMP (or the approved T&E Plan for all programs which do not require a DTEMP) for all T&E through DT-IV and OT-IV, except fleet travel and operating costs for Fleet RDT&E Support, agency travel and normal operating costs for Other RDT&E Support, and OTA travel and non-program related administrative costs. The DAs funding responsibilities include the following.

(1) All DTE costs.

(2) All OTE costs through OT-IV, including laboratory and contract analytic support, instrumentation, data collection and reduction (including ADP

services and administration), establishment of training and training costs, expendables, maintenance and logistic support, test articles, OTA program related costs, etc., except fleet, agency, and OTA costs noted in subparagraph a. above. Since the DA must budget for these costs, it is essential that the OTA identify all resource requirements in sufficient time to integrate these, through the DTEMP, into the program schedule and the budget cycle.

b. Fleet Commanders will plan, program, budget, and fund fleet travel costs and operating costs for Fleet RDT&E Support (including AIRTEVRON aircraft operating costs) and all costs of OT-V except the procurement cost of the training device being tested and OTA travel costs. The CNO Long-Range/Quarterly Fleet RDT&E Support Requirements will provide requisite guidance.

c. Agencies designated to provide Other RDT&E Support will plan, program, budget, and fund agency travel and operating costs for Other RDT&E Support. The training agent will budget all costs of OT-V except the procurement cost of the training device being tested and OTA travel costs. The CNO Long Range Other RDT&E Support Requirements will provide requisite guidance.

d. CNET will plan, budget, and fund the OTA travel costs and nonprogram related administrative costs, except that for DCAT-B OTE programs, COMOPTEVFOR will assume this responsibility.

e. Responsibilities for T&E costs of research and development efforts not related to specific acquisition programs are the same as those above, except the R&D agency has responsibilities equivalent to those of the DA.

12. T&E Identification. To assist in identifying and tracking T&E and RDT&E Support scheduling and accounting, CNO (OP-098) will assign a T&E number to each acquisition program, and to each nonprogram-related research or development effort requiring RDT&E Support. The assigned number will continue for the life of the program. For ACAT-I and II and ACAT-III and IV (DCAT-A and B) programs, this number will identify the DTEMP. It will be used by all activities, in combination with the DT/OT phase number, to make reference to T&E on the specified system.

13. OPNAV Focal Point for T&E. The Director, Test and Evaluation Division (OP-983) is the focal point established in OPNAV, in accordance with reference (b), to assist the DA and OTA, and to keep the CNO fully informed of evaluation requirements and results. OP-983 is the Navy's single point of contact with RDT&E in the office of the Secretary of Defense.

14. Program Reviews. A principal purpose of T&E is to assist decision makers at key milestones. The three basic program milestones of every Navy acquisition program, regardless of ACAT, are program initiation, full-scale development, and production. Other milestones, keyed especially to the commitment of resources, may be appropriate in particular programs and may be scheduled by the Assessment Sponsor or the Resource Sponsor. At each milestone the decision authority uses T&E results and other input data to decide whether to commit added resources to the program thus controlling the program through the acquisition process. For ACAT-I, II, and III acquisitions, the program review board provides the forum at which the DTE Advisor and the OTE Advisor present the results of T&E. For

ACAT-IV training device acquisition programs, CNET will establish comparable review procedures.

15. Approval for Service Use (ASU). ASU, or Provisional ASU (PASU), is a separate determination addressed during the program review for the production decision (Milestone III). ASU and PASU procedures are governed by reference (e). For ACAT-I, II, and III training device programs, the program decision authority, program review board, DTE Advisor, and OTE Advisor are those shown in figure 2. ASU and PASU procedures for ACAT-IV acquisition programs for training devices will be established by CNET.

ACAT/DCAT	Decision Authority	Program Review Board	DTE Advisor	OTE Advisor
I	CNO or SECNAV followed by SECDEF	CEB followed by DSARC	Project Manager plus DDT&E at DSARC	OTA at CEB DDT&E at DSARC
II	OP-090 for CNO	ARC of CEB	Acquisition Manager	OTA at ARC DDT&E at DSARC or DOD Management Review
III	DCNO or DMSO for CNO	OPNAV Review Board	Acquisition Manager	OTA
IV	CNET/CHNAVMAT			
A	DCNO or DMSO for CNO	OPNAV Review Board	Acquisition Manager	OTA
B	DCNO or DMSO for CNO	OPNAV Review Board	Acquisition Manager	COMOPTEVFOR
C	CNET			

Figure 2. Program Review Responsibilities for Training Devices

16. Implementing Actions. T&E of training devices will be accomplished in accordance with the policy, principles, and direction contained in this instruction.

a. Programs for which the first major production decision (Milestone III) is planned within 6 months of the date of this instruction are excluded from the requirements of this instruction.

b. For other existing ACAT-I, II, and III programs, the DA will prepare a DTEMP (or revise the existing TEMP) in accordance with this instruction and forward it for approval.

(1) The schedule for submission of the DTEMP is:

(a) within 1 year of the date of the current TEMP, or

(b) at least 2 months prior to the next milestone decision, or

(c) within 6 months from the date of this instruction, whichever occurs first.

c. Existing instructions which conflict with this instruction will be revised as soon as possible, but not less than 6 months from the date of this instruction.

d. CNET will:

(1) Implement this instruction within the Naval Education and Training Command (NAVEDTRACOM) as soon as possible, but not later than 6 months from the date of this instruction.

(2) Recommend an OTA within the NAVEDTRACOM to OP-098 as soon as possible so that OTE planning and procedures can be implemented within the constraints of paragraph 16.b. above.

(3) Coordinate with CHNAVMAT the transfer of management responsibilities from the structure as defined in reference (d) to the management structure as established for training devices in this instruction. Transfer should be completed within 6 months of the date of this instruction.

(4) Submit to CNO (OP-098), within 3 months, a listing of training device acquisition programs in ACATs I, II, and III, in existence and planned, which are covered by the provisions of this instruction. Identify, in the listing, those programs which, in CNET's judgment, should be upgraded to higher ACATs under the criteria shown in table 1. For applicable acquisitions, recommend appropriate DCATs.

e. CHNAVMAT will:

(1) Implement this instruction within NAVMAT as soon as possible, but not later than 6 months from the date of this instruction.

(2) Coordinate with CNET the transfer of management responsibilities from the structure as defined in reference (d) to the management structure as established for training devices in this instruction. Transfer should be complete within 6 months of the date of this instruction.

f. CNET, the DA, OTA, and fleet commanders will assume funding responsibilities outlined in this instruction immediately. In those cases where this transfer of funding responsibilities introduces requirements for unprogrammed funds, this question will be addressed in the same manner as any unfunded deficiency. Where the deficiency results from the moving of a responsibility from one organization to another, the deficiency will be addressed to CNO.

17. T&E Reports. T&E reporting will be correlated to key decision points and secondary milestones as established by sponsors. Requirements for test reports and evaluation reports (DTE and OTE) will be specified in the appropriate DTEMP. Reports required by this instruction will carry the OPNAV report symbols and notation specified in enclosure (4).

OPNAVINST

CERTIFICATION OF READINESS FOR TRAEVAL

1. After completion of TECHEVAL, and when the DA judges the system to be ready for TRAEVAL, he will certify the system to be ready for TRAEVAL to CNO (OP-098). The report will be made by letter or message, information to Assessment Sponsor, Resource Sponsor, CNET, OTA, fleet and school commands involved, and other interested commands. The report will address the certification criteria set forth in paragraph 2. below, and will either certify full compliance or request waivers with justification for minor items.

2. The criteria for full Certification of Readiness for TRAEVAL are:

a. All DTEMP specified DT-III items have been completed, or will be completed at the same time as agreed upon TRAEVAL items.

b. All DTEMP specified objectives, performance thresholds, etc., have been met, or are anticipated to be met, for those items to be tested simultaneously with TRAEVAL items.

c. The results of DTE demonstrate that: (1) engineering is reasonably complete, (2) all significant design problems (including compatibility, interoperability, reliability, maintainability, and logistical supportability) have been identified, (3) solutions to the above problems are in hand, and (4) the system is functioning in a technically acceptable manner.

d. There is a high probability that the system will perform successfully in TRAEVAL and will meet the technical and operational criteria for full ASU on completion of TRAEVAL.

e. Approved system operating and maintenance documents, including 3-M documentation, have been distributed for TRAEVAL. Reading grade levels established by the DA will have been verified using Manuals, Technical: General Style and Format Requirements (MIL-M-38784A).

f. The system Integrated Logistics Support Plan has been provided to the OTA.

g. Adequate logistic support, including spares and repair parts, ground support equipment, etc., are available for TRAEVAL.

h. The TRAEVAL manning of the system is the same (in numbers, rates, ratings, and experience level) as is planned for operational units under normal operating conditions.

i. The Navy Training Plan has been provided to the OTA.

j. All required training for personnel who will operate and maintain the system during TRAEVAL (including OTA personnel) has been completed. This training is representative of that planned for follow-on training.

Enclosure (1)

k. All resources required for TRAEVAL (instrumentation, targets, expendables, etc.) have been arranged for and are available.

l. The system provided for TRAEVAL has the same configuration as the expected production system. (Note: If this is not the case, specify in detail the production configuration, and state differences.)

3. If the criteria for full Certification of Readiness for TRAEVAL have not been met, the report must offer alternative courses of action, including delaying TRAEVAL, until the criteria are essentially met, giving the impact of each alternative, and the rationale for the recommended course of action.

OPNAVINST

DEVICE TEST AND EVALUATION MASTER PLAN (DTEMP)

1. DTEMP Concept. The DTEMP is a short, concise master plan for training device T&E. The initial DTEMP should be prepared and submitted as early in the acquisition program as possible, preferably prior to Milestone I. It should be updated whenever major changes occur and reviewed no less frequently than once per year or 2 months prior to each major milestone. Every effort should be made to limit the DTEMP to 20 pages for complex programs and fewer for more straightforward ones. The DTEMP is the single management document which integrates the entire T&E effort of the acquisition program. Its purposes are to direct and control the accomplishment of adequate T&E; to identify all required T&E resources; to facilitate long range planning, programming, and budgeting; to eliminate redundant testing; and to reduce RDT&E Support to the essential minimum. It must be factual and specific, avoiding generalities, and emphasize quantative values whenever possible. The DTEMP forms the basic contract between the DA and the OTA for conduct of the overall T&E effort.

2. DTEMP Outline. The DTEMP contains 7 parts:

I. Administrative Information
II. Description
III. Integrated Schedule
IV. DTE Outline
V. OTE Outline
VI. Resources Summary
VII. References

3. DTEMP Preparation. In T&E planning, which is the core of the DTEMP preparation, the DA is the authority for DTE and the OTA is the authority for OTE. Planning must be done in active and close coordination between the DA and the OTA. Each principal is to recommend appropriate changes in the other's plans and to be receptive to change recommendations from the other principal, to the end that adequate T&E is accomplished with minimum expenditure of effort and resources. Where appropriate, combined DT/OT will be planned, provided each principal conducts and reports their portion of the T&E independently. In preparing the DTEMP:

a. The DA drafts Parts I, II, IV, and VII.

b. The OTA drafts Part V.

c. The DA and the OTA integrate the T&E Outlines (Parts IV and V) to produce Parts III and VI.

d. The DA submits the DTEMP to the Assessment Sponsor for approval outlining any unresolved issues in an accompanying memorandum.

e. The OTA submits his views on unresolved issues to the Assessment Sponsor by separate memorandum, copy to the DA.

Enclosure (2)

4. DTEMP Format. TAB A contains the standard DTEMP format to be used as a guide. The DTEMP number is the same as the T&E identification number in the CNO Index of Acquisition Programs. The date at the top of each DTEMP page is the date that page was last revised. The following comments are keyed to related sections of Tab A.

a. Part I. Administrative Information. Keep brief. Include only essential information.

b. Part II. Description. Each section should include the following information. If any section is inappropriate to the training device under consideration, a statement to that effect should be made under the appropriate heading.

(1) System Description and Mission. This section should contain a short description of the operational system and the training system. Include a brief rationale for the needed training device. The training system and device description should include the official nomenclature.

(2) Critical T&E Issues. The critical issues in the device acquisition documentation should be reviewed and those pertaining to the T&E program should be described in this section. Include how T&E will be used to resolve each issue.

(3) Objectives and Thresholds. Overall program test objectives and thresholds should be included in this section keyed to major program milestones and, where applicable, to major operational hardware milestones.

(4) Required Technical Characteristics. A list of key technical characteristics of the device should be listed in this section showing the performance variables, goals, and thresholds.

(5) Required Operational Characteristics. Same as (4) above, expressed in terms of training effectiveness and operational suitability.

(6) Environmental Impact Assessment of T&E. Keep brief. The impact of the device in terms of air, water, and noise pollution is to be discussed.

c. Part III. Integrated Schedule. This part will consist of one page which may be a foldout. It displays the integrated time sequencing of test and evaluation to include DTE (including contractor test and evaluation, Navy preliminary and technical evaluations, acceptance testing, etc.), OTE (both IOTE and FOTE), and related key events in the acquisition decision-making process. A legend may be used for essential explanatory notes. However, more complete information about the events or the schedule is contained in the DTE and OTE Outline (Parts IV and V). The following typical T&E events should be included in the integrated schedule.

(1) Program Milestones. Both device and operational hardware (if appropriate) milestones 0, I, II, and III are to be depicted. Device ASU and other program reviews are to be included.

(2) Pertinent T&E data, to include all Navy and contractor tests and evaluations.

(3) Major resource availability requirements.

(4) Key dates for the issuance of test plans, reports, and similar documents.

d. Part IV. DTE Outline. This part should contain all planned DTE in sufficient detail that resources can be identified, and the DA can, subsequently, develop detailed test plans. Although the near-term events defined in the outline will contain fairly precise data, the long-range portion should also be as complete and specific as possible as regards schedules and resources. Security of equipment and operations should be explicitly covered in all T&E planning. The DTE Outline will contain the following three sections:

(1) DTE to Date. This section will contain a summary of the DTE conducted prior to the date of the current revision to the DTEMP. A brief description of the actual test articles (brassboard, advanced development model, etc.) with emphasis on how the operational or training capabilities of the test article differed from the intended production item should be included. DTE events and results related to performance characteristics, critical issues, requirements levied by review boards, etc., should be emphasized. Technical characteristics and specification requirements which were demonstrated (or failed to be demonstrated) should be addressed. The results and decisions of any program reviews should be shown.

(2) Future DTE. This section addresses all remaining DTE commencing with the date of the current DTEMP revision and extending through DT-IV. Each remaining phase of DTE will be addressed individually and include the four subsections below.

(a) Equipment Description. This description emphasizes the training capability and how it is expected to differ from the model previously tested in DTE/OTE and the production model.

(b) DTE Objectives. Include the specific objective of each phase or subphase of future DTE. These objectives are related to, but probably not the same as, the overall program objectives. If the program source documents require demonstration of particular technical characteristics in a given DT phase, these characteristics are to be included.

(c) DTE Events/Scope of Testing/Basic Scenarios. This subsection includes all T&E events which will provide data with which to assess the device against the objectives. The scope and basic test scenarios should be described in sufficient detail so that the relationship between the tests and the objectives is apparent.

(d) Quantifiable Scope of Effort. This is a brief summary of the key elements of the testing expressed in terms of a measurable output.

(3) Critical T&E Items. This section highlights any item whose availability is critical to the performance of adequate DTE prior to the next decision point. Should the critical item not be available, then the next decision point may be delayed. Critical items may be displayed on the Integrated Schedule if appropriate.

e. Part V. OTE Outline. The OTE Outline is prepared by the OTA. It addresses all OTE from the earliest conceptual phase of IOTE through the final phase of FOTE. The OTE Outline will show all OTE in sufficient detail that resources can be identified, and the OTA can develop test plans from it. The sections and subsections required by the OTE Outline are the same as those in the DTE Outline (Part IV).

f. Part VI. Resource Summary. This part contains a combined summary, in tabular form, of the resources required for all T&E. Listed on the summary form are 11 specific resource categories likely to be required. Some listed categories may not be required for a particular program; they should contain a "not applicable" statement. Should additional categories be required, they should be listed. For each listed category, show the major requirement (what, how much, how many, etc.) at the times they are needed. If the tabular summary does not allow adequate space to define essential resource requirements in sufficient detail, an additional page can be added. Where possible, resources should be shown in kind rather than in dollar terms. The summary should include the required location of each resource and, where applicable, the disposition after completion of testing. If resources are already committed to a program, these should be included and listed. Resource requirements for DTE should be listed separately from those required for OTE. Where one resource can be used for both DTE and OTE, this should be indicated on the summary. As an aid to developing the resource requirements in each of the categories listed, a brief explanation is presented.

(1) Test Articles. The actual number of test articles required for each major type of T&E must be identified. If subsystems (components, assemblies, or subassemblies) are to be tested individually, each subsystem and the quantity required are to be identified. Specifically, identify requirements for advanced development models, engineering development models, preproduction prototypes, special preproduction prototypes, and production models. If a number of test systems are to be produced, indicate by serial number when each system is required.

(2) RDT&E Support. RDT&E Support is divided into two categories--that provided by operational fleet units (Fleet RDT&E Support) and that provided by a shore establishment command (Other RDT&E Support).

(a) Fleet RDT&E Support. The number of ship-days, aircraft-hours, and types of ships and aircraft should be estimated. If support is constrained to a specific area (Atlantic, Pacific) or to a specific ship or aircraft, so indicate. Time required for installation and removal of test systems and test-associated equipment should be indicated. A distinction should be made between dedicated, concurrent, and NIB support requirements. Include an estimate of the number of personnel who will be aboard each ship for T&E purposes,

not including ship's company. Fleet RDT&E Support required soley for "target" purposes should be identified as such. (The services of nonfleet-controlled resources such as yard tugs, barges, and ancillary equipment are entered under the Support Equipment Category.)

(b) Other RDT&E Support. The number of days and the number and type of facilities required to perform the T&E should be estimated. If support is constrained to a specific locale or to a specific facility or type of facility, so indicate. Time required for the installation and removal of test device(s) and test-associated equipment should be indicated. A distinction should be made between dedicated, concurrent, and NIB support requirements. Include an estimate of the number of personnel who will be required at each facility for T&E purposes, not including permanently assigned personnel.

(3) Test Sites/Ranges. Test sites and ranges to be used for T&E, and when they are required, are to be listed. Usage time is to be estimated in days and hours per day. When the test site or range is identified, the normal instrumentation of that facility is expected to be available. Resource requirements for modifying existing facilities or developing new facilities will be included under this resource heading.

(4) Special Instrumentation. Special instrumentation requirements for T&E should be identified (when and where required). Instrumentation installed at test sites, ranges, or facilities which will be available under normal circumstances need not be identified separately from the site, range, or facility. The source of the special instrumentation, the time required for installation, and the installing activity will be included.

(5) Support Equipment. Support equipment is equipment required to conduct a test, but is not a part of the test itself. Support equipment should be identified by type, number required, date required, time needed, and location. Support equipment which has standard installation/removal factors or costs need only be noted as requiring installation/removal. Installation and removal time of other support equipment is to be estimated and the installing and removal activity identified.

(6) Installation/Removal Requirements. Support equipment is a separate resource requirement. The installation and removal requirements for equipments, including test articles which are actually used in tests to be conducted, will be summarized. If the installation and removal is initially for DTE, and the same equipment will be used, in place, for OTE, this will be indicated. The installing/removing activity, estimated man-days required, and the work site should be identified.

(7) Expendables. Included here are items expended during tests, not including test items or targets. Also included are specialized supplies not normally used, or used in excess of the normal supply, by the test activity, test site, or supporting unit(s). Include number and type required and the date and location for the expenditure.

(8) Logistic Support. Requirements for repair parts, spares, etc., in excess of the normal support package provided with the test article(s) is to be shown. Include extra spares necessary to support other equipments used in conjunction with the test.

(9) Personnel. Estimate personnel requirements in man-days per calendar period. Rank/rate/grade, number of personnel, and when and where they are required are entered. Analytic and simulation support personnel should be tabulated separately from test personnel. Requirements for personnel other than test, analytic, and simulation support should be identified and entered as a distinct category. If contractors are hired solely for testing, analytical, or simulation support, the man-weeks of contract support should be estimated.

(10) Personnel Training. All test personnel and fleet or other source personnel who require training for the testing, including operators and maintenance personnel, are to be included. Training of DA and OTA test supervisors and observers must also be included. Identify the rate/rank, number of personnel, source, and when the training should be complete.

(11) Planned Travel. This entry is required to permit long-range budgeting for travel and per diem. Estimate planned travel in dollar terms by FY, subdivided by the command responsible for funding.

(12) Other. Include other categories of resources required as necessary.

g. Part VII. References. This part should list pertinent reports containing results of accomplished test and evaluation. In addition, developed test plans can be referenced for more detailed information.

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(Date Revised)

DEVICE TEST AND EVALUATION MASTER PLAN NO.

(Program Short Title)

Part I

Administrative Information

1. Full Program Title _____

   DCP/PM/NDCP No. _____

2. Program Element No. _____ Project No. _____

   S&TO No. _____ OR No. _____

   DP No. _____

3. ACAT _____ DCAT _____ DA _____

4. Points of Contact

Title	Name/Code	Agency	Ph.No.
Assessment Sponsor			
Resource Sponsor			
Program Coordinator			
Development Coordinator			
PM/AM			
CHNAVMAT Coordinator			
CNET Coordinator			
DA Test Director			
Operational Test Director			
(Others as required)			

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Tab A

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DEVICE TEST AND EVALUATION MASTER PLAN NO.

(Program Short Title)

Part I

5. Funding and Procurement

	FISCAL YEAR						
	19XX and prior	19XX (Note 1)	19XX	19XX	19XX	19XX	19XX
Funding ($M)							
RDT&E							
Procurement							
Procurement Quantity							
Preproduction Prototypes							
Special Pilot Production							
Production							

Note 1: Current FY

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6. Delivery and Installation

a. Delivery Schedule (Example):

	FISCAL-YEAR						
	19XX	19XX	19XX	19XX	19XX	19XX	19XX
Preproduction Prototypes	1						
Special Pilot Production				1			
Production							1

b. Programmed Installation (Example):

FY 19XX - DT II/AT SSC, Great Lakes.

FY 19XX - TECHEVAL/TRAEVAL AT SSC, Great Lakes

FY 19XX - OT-V at SSC, San Diego.

7. Remarks

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DEVICE TEST AND EVALUATION MASTER PLAN NO.

(Program Short Title)

Part II

Description

1. System Description and Mission

   a. Operational System Description
   b. Functional (Training Mission) Description
   c. Hardware Description

2. Critical T&E Issues (From Document No._____of_____(date)_____.)

   a.
   b.

3. Objectives and Thresholds

   a. Program Objectives

      (1)
      (2)

   b. Program Thresholds

      (1) Cost

          (a)

      (2) Performance

          (a)

      (3) Schedule

          (a)

4. Required Technical Characteristics (From_____(source) of _____(date)_____)

   a.
   b.
   c.

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5. Required Operational Characteristics (From (source) of (date))

a. Training Effectiveness

(1)
(2)

b. Operational Suitability

(1) Reliability

(2) Maintainability

(3) Availability

(4) Logistic Supportability

(5) Compatibility

(6) Interoperability

(7) Training (user)

(8) Transportability

(9) Human Factors

(10) Safety

NOTE: Certain aspects of specific required operational characteristics may be expressed in quantitative terms, others will require a qualitative expression.

6. Environmental Impact Assessment of T&E

a. Probable impact of required T&E on the environment

b. Alternatives

c. Etc.

DEVICE TEST AND EVALUATION MASTER PLAN NO.
(Program Short Title)

PART III - INTEGRATED SCHEDULE

(Include Only Rows Actually Containing Entries) DATE REVISED _____

EVENT	FY-XX (Current)				FY-XX				FY-XX		
	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1	2	3
Major Milestones											
Contract Dates											
Initiating Documents											
DTEMP											
Test Articles											
DTE											
OTE											
DTE Test Plan											
OTE Test Plan											
Hardware Milestones											

Legend
(As Required)

DEVICE TEST AND EVALUATION MASTER PLAN NO. OPNAVINST
(Program Short Title)

DATE REVISED _____

tr	FY-XX				FY-XX				FY-XX				FY-XX			
	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1	2	3	4	1	2	3	4	1	2	3	4

Enclosure 2
Tab A

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DEVICE TEST AND EVALUATION MASTER PLAN NO.

(Program Short Title)

PART IV

DTE OUTLINE

1. DTE to Date

   a. Applicable DTE Phase(s) (DT-I, DT-II, etc.)

      (1) Equipment Description

      (2) DTE Events and Results

      (3) Program Management Reviews/Decisions

2. Future DTE

   A. Applicable DTE Phase(s) and Inclusive Dates (DT-III A, DT-III B, etc.)

      (1) Equipment Description

      (2) DTE Objectives

      (3) DTE Events/Scope of Testing/Basic Scenarios

      (4) Quantifiable Scope of Effort

3. Critical Items

   a.
   b.

NOTE: Each DT Phase will be discussed in an independent subparagraph.

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Tab A

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DEVICE TEST AND EVALUATION MASTER PLAN NO.

(Program Short Title)

PART V

OTE OUTLINE

1. OTE to Date

   a. Applicable OTE Phase(s) (OT-I, OT-II, etc.)

      (1) Equipment Description

      (2) OTE Events and Results

      (3) Program Management Reviews/Decisions

2. Future OTE

   a. Applicable OTE Phase(s) and Inclusive Dates (OT-III A, OT-III B, etc.)

      (1) Equipment Description

      (2) OTE Objectives

      (3) OTE Events/Scope of Testing/Basic Scenarios

      (4) Quantifiable Scope of Effort

3. Critical Items

   a.
   b.

NOTE: Each OT Phase will be discussed in an independent paragraph.

Enclosure (2)
Tab A

DEVICE TEST AND EVLUATION MASTER PLAN NO.
(Program Short Title)

PART VI - RESOURCE SUMMARY
(Include Only Rows Actually Containing Entries)

DATE REVISED_____

RESOURCE		TYPE TEST	FY-XX (Current Year) 1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	FY-XX 1st Qtr	2nd Qtr	3rd Qtr	4t
Test Articles		DTE								
		OTE								
RDT&E Support	Fleet	DTE								
		OTE								
	Other	DTE								
		OTE								
Test Site/Ranges		DTE								
		OTE								
Special Instrumentation		DTE								
		OTE								
Support Equipment		DTE								
		OTE								
Installation Removal Requirement		DTE								
		OTE								
Expendables		DTE								
		OTE								
Logistic Support		DTE								
		OTE								
Personnel		DTE								
		OTE								
Personnel Training		DTE								
		OTE								
Planned Travel		DTE								
		OTE								
Other		DTE								
		OTE								
Other		DTE								
		OTE								
Other		DTE								
		OTE								

EVICE TEST AND EVLUATION MASTER PLAN NO. OPNAVINST
(Program Short Title)

DATE REVISED________________________

ent Year)		FY-XX				FY-XX				FY-XX				FY-XX
3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1	2	3	4	1	2	3	4	

OPNAVINST

REQUESTS FOR RDT&E SUPPORT

1. Fleet RDT&E Support

a. Requests for Fleet RDT&E Support are used only to obtain support for research and development not related to specific acquisition programs. All other Fleet RDT&E Support is obtained through TEMPs or DTEMPs.

b. Requests for Fleet RDT&E Support to be used in the development of training devices are submitted by the cognizant R&D Agency, via CNET, to CNO (OP-983) for approval. Copies of each request will be distributed to CINCPACFLT, CINCLANTFLT, CHNAVMAT, COMOPTEVFOR, DEPCOMOPTEVFORPAC, appropriate type commanders, and may be sent to other interested commands. COMNAVSEASYSCOM will be included in the distribution when ship weight and moment or safety considerations are involved. COMNAVAIRSYSCOM will be included in the distribution when aircraft installations are involved.

c. Every effort must be made to keep requested services to an absolute minimum.

d. Requests will be submitted at least 3 months before the start of the earliest quarter in which support is required. For continuing programs, each request will contain both short-term and long-term requirements. Short-term requirements are those in the 18-month period following submission of the request. These must be stated in sufficient detail to permit their use in preparing the CNO Quarterly Fleet RDT&E Support Requirements for Fleet Scheduling. Long-term requirements are those from the end of the short-term period to the end of the research or development program (but no more than 5 years). Reasonable care must be taken in estimating long-term requirements because these estimates are used in planning, programming, and budgeting for Fleet RDT&E Support.

e. Requests will be updated and resubmitted when significant changes occur, and at least annually.

f. Tab A is the format for Fleet RDT&E Support requests.

g. One-time requests for support may be submitted by message.

h. If requests are approved by CNO, OP-098 will assign a T&E identification number (and priority, for imminent projects), and direct CNET to schedule the Fleet RDT&E Support.

2. Other RDT&E Support.

a. Requests for Other RDT&E Support are used only to obtain support for research and development not related to specific training device acquisition programs. All Other RDT&E Support related to a specific acquisition program is obtained through DTEMPs.

Enclosure (3)

b. Requests for Other RDT&E Support will be confined to programs directly related to training device development.

c. Requests for Other RDT&E Support to be used in the development of training devices are submitted by the cognizant R&D Agency, via CNET, to CNO (OP-983) for approval. Copies of each request will be distributed to the immediate commander of the facility being requested, the facility being requested, and may be sent to other interested commands.

d. Every effort must be made to keep requested services to an absolute minimum.

e. Requests will be submitted at least 3 months before the start of the earliest quarter in which support is required. For continuing programs, each request will contain both short-term and long-term requirements. Short-term requirements are those in the 18-month period following submission of the request. These must be stated in sufficient detail to permit their use in scheduling the support. Long-term requirements are those from the end of the short-term period to the end of the research or development program (but no more than 5 years). Care must be taken in estimating long-term requirements because these estimates are used to plan, program, and budget.

f. Requests will be updated and resubmitted when significant changes occur, and at least annually.

g. Tab B is the format for Other RDT&E Support requests.

h. One-time requests for support may be submitted by message.

i. If requests are approved by CNO, OP-983 will assign a T&E identification number, a priority for imminent projects, and direct CNET to schedule the support.

OPNAVINST

FORMAT FOR FLEET RDT&E SUPPORT REQUESTS

I. REQUIREMENTS

1. Specify the support required, including type, extent, and duration. State requirements in terms of ship, aircraft, or unit type, unless a specific ship/aircraft/unit is required. If a specific ship/aircraft/unit is required, state why. Include any unusual training or operating requirements the supporting unit(s) must meet.

a. Short-term requirements. State the planned start-date for each discrete period of support requested.

b. Long-term requirements. State the FY quarter in which each discrete period of support will be required.

II. PURPOSE

1. Identify the program for which support is requested, including program element number and project number.

2. Briefly state the purpose of the program.

3. For each short-term requirement, specify:

a. Planned tests, indicating in general how the tests will be performed.

b. Special conditions needed for the tests, such as weather, geographic area, geometry of tests, etc.

c. When the test plan will be available.

III. DESCRIPTION AND STATUS OF EQUIPMENT (Short-term support requirements only)

1. Briefly describe system/equipment to be installed or taken aboard. Include power, weight and moment considerations, possible effects on ship/aircraft performance, etc.

2. Estimate number and qualifications of personnel needed for operation and maintenance of the equipment or system.

3. State whether shipyard or tender availability will be required for installation, including any special test or data collection equipment.

4. State estimate of installation/removal time.

5. State whether funds for installation/removal are or will be available.

Enclosure (3)
Tab A

6. State whether installation plan has been forwarded, or date it will be forwarded, to installing activity.

7. Provide disposition instructions for material on completion of the tests.

8. Where applicable, identify approving authority for weight and moment or safety considerations.

IV. CLASSIFICATION AND SECURITY (All requests)

1. Specify security measures (physical, operational, electronic), range precautions, information not releasable to foreign nationals, or any special considerations such as patent rights, foreign-origin equipment, etc.

2. Specify classification of the subject of the program, if overall project is classified.

3. Specify classification of equipment capabilities and performance.

V. REMARKS

1. Indicate availability of technical personnel from requesting activity for technical support.

2. Indicate number of personnel to embark in fleet unit(s). (Short-term requirements only.)

3. List names of individuals who are immediately responsible for the project and who can act in a liaison capacity. Include organization, organization code, and telephone number.

OPNAVINST

FORMAT FOR OTHER RDT&E SUPPORT REQUESTS

I. REQUIREMENTS

1. Specify the support required, including type, extent, and duration. State requirements in terms of activity type, unless a specific activity is needed. If a specific activity is needed, state why. Include any unusual training or other requirements the supporting activity(ies) must meet.

a. Short-term requirements. State the planned start-date for each discrete period of support requested.

b. Long-term requirements. State the FY quarter in which each discrete period of support will be required.

II. PURPOSE

1. Identify the program for which support is requested, including program element number and project number.

2. Briefly state the purpose of the program.

3. For each short-term requirement, specify:

a. Planned tests, indicating in general how the tests will be performed.

b. Special conditions needed for the tests, such as weather, geographic area, geometry of tests, etc.

c. When the test plan will be available.

III. DESCRIPTION AND STATUS OF EQUIPMENT (Short-term support requirements only)

1. Briefly describe system/equipment to be installed.

2. Estimate number and qualifications of personnel needed for operation and maintenance of the equipment or system.

3. State who will install and remove equipment.

4. State installation/removal time.

5. State whether funds for installation/removal are or will be available.

6. State whether installation plan has been forwarded, or date it will be forwarded, to installing activity.

7. Provide disposition instructions for material on completion of the tests.

IV. CLASSIFICATION AND SECURITY (All requests)

1. Specify security measures (physical, operational, electronic), range precautions, information not releasable to foreign nationals, or any special considerations such as patent rights, foreign-origin equipment, etc.

2. Specify classification of the subject of the program, if overall project is classified.

3. Specify classification of equipment capabilities and performance.

V. REMARKS

1. Indicate availability of technical personnel from requesting activity for technical support.

2. Indicate number of personnel to be billeted at the activity providing support over and above the authorized allowance. (Short-term requirements only.)

3. List names of individuals who are immediately responsible for the project and who can act in a liaison capacity. Include organization, organization code, and telephone number.

OPNAVINST

REPORT SYMBOLS

REPORT	SUBMITTED BY	OPNAV REPORT SYMBOL
CNO Index of Acquisition Programs	OP-098	3960-5
*Test and Evaluation Master Plan (TEMP)	DA and COMOPTEVFOR	3960-6
*Device Test and Evaluation Master Plan (DTEMP)	DA and OTA	
Request for Fleet RDT&E Support (for nonacquisition programs)	R&D Agency	3960-7A
Request for Other RDT&E Support (for nonacquisition programs)	R&D Agency	
CNO Long-Range Fleet RDT&E Support Requirements	OP-098	3960-7B
CNO Long-Range Other RDT&E Support Requirements	OP-098	
CNO Quarterly Fleet RDT&E Support Requirements	OP-098	3960-7C
Quarterly Report of Fleet RDT&E Support Provided	COMOPTEVFOR/OTA	3960-7D
Quarterly Report of Other RDT&E Support Provided	OTA or DA	
*DT&E Report	DA	3960-8**
Certification of Readiness for OPEVAL	DA	3960-9
Certification of Readiness for TRAEVAL	DA	
Ship Readiness for OPEVAL	Ship CO	3960-10
Deficiency Report	COMOPTEVFOR/OTA	3960-11
*OT&E Report	COMOPTEVFOR/OTA	3960-12
*COMOPTEVFOR Tactics Guide	COMOPTEVFOR	3960-13

REPORT SYMBOLS (Continued)

*These reports will carry the following notation:

"Distribution limited to U.S. Government agencies only; Test and Evaluation; (date of report). Other requests for this document must be referred to the Chief of Naval Operations (OP-098)."

**Many types of DT&E Reports are assigned other symbols, and should continue with them. 3960-8 is assigned for major DT&E reports (e.g., TECHEVAL reports), or for DT&E reports not carrying other symbols.

APPENDIX B

GLOSSARY OF TERMS USED IN THIS REPORT

GLOSSARY OF TERMS USED IN THIS REPORT

Acceptance Tests	Tests conducted by or for the Developing Agent prior to government acceptance of the training device. The objective of these tests is to insure the device meets the government's technical specifications.
Acquisition Categories (ACAT)	An assigned category based on nominal value thresholds or other criteria which define the level of attention in the acquisition process and the degree of T&E required.
Approval for Service Use (ASU)	An approval of a training device prior to the production decision to insure the device meets operational and technical requirements within the training system for both performance and supportability, and is training effective.
Device Test and Evaluation Master Plan (DTEMP)	Identical to the TEMP, except applicable only to training devices.
Design Freeze	That point in the developmental effort at which the training device design is agreed upon by both the government and the vendor. Any subsequent change to the design requires a contract modification.
Development Agent (DA)	The Systems Command or Service Agency assigned responsibility for the development and development test and evaluation of a training device, subsystem of the device, or an item of training equipment.
Direct Training Device Requirement	A requirement established to support a training system for a new or modified operational system or hardware.
Fleet Project Team (FPT)	A group of knowledgeable representatives from the fleet or other user and interested nonuser activities, consisting of qualified military and/or civilian personnel designated by cognizant commands. The FPT will assist and advise the training device development and acquisition activity in development, acquisition, and acceptance of specifically assigned training devices.
Hardware Acquisition Manager	The activity or command having direct technical contractual responsibility and authority to develop and/or acquire a specific operational system or equipment.

GLOSSARY OF TERMS USED IN THIS REPORT (continued)

Independent Test and Evaluation	That operational test and evaluation conducted by a field agency which is separate and distinct from the developing/procuring command and from the using command.
Indirect Training Device Requirement	A training device requirement identified within the training community to support an existing or proposed course of instruction.
Job Performance Measures (JPM)	Tests that are used to evaluate the proficiency of a job holder on each task he performs.
Operational Test Agent (OTA)	The Navy agent designated to conduct an independent operational test and evaluation.
Operational Test and Evaluation (OTE)	That training device test and evaluation conducted to estimate the prospective training effectiveness and operational suitability, and the need for any modifications to the device or training system of which it is a part.
Prototype Training Device	The first unit or units acquired with RDT&E funds. This is the preproduction unit(s) acquired to insure the device meets operational and development requirements.
Service Acceptance	Acceptance by the Navy of the training device from the vendor for inclusion in the Navy inventory.
Test and Evaluation Master Plan (TEMP)	The overall test and evaluation plan to identify and integrate the effort and schedules of all T&E to be accomplished and to insure that all necessary T&E is accomplished prior to the key decision point.
Training Device Acquisition Activity	The activity or command having direct technical and contractual responsibility and authority to develop and/or acquire a specific training device.

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