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BUILDING A JOINT TRAINING READINESS REPORTING SYSTEM

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May 1996

Prepared for
Office of the Under Secretary of Defense
(Personnel and Readiness)

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PREFACE

This paper was prepared for the Office of the Under Secretary of Defense (Personnel and Readiness) in partial fulfillment of the task entitled "Impact of Training Resources on Force Readiness." It addresses that part of the task which directs IDA to propose a set of Service and Joint Training readiness indicators.

This study has benefited from the advice and assistance of a number of individuals. In particular the author would like to thank the reviewers—GEN Paul F. Gorman, GEN Robert Russ, ADM Grant Sharp, and MG Clyde L. (Jake) Vermilyea.

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SUMMARY

This paper examines issues associated with training and training readiness in a joint environment. It has been designed explicitly to provide the foundation for building a tool for commanders at all levels that will enhance their ability to (1) identify the tasks that are essential to the performance of their joint missions, (2) communicate these tasks up and down the chain of command to assure common understanding in a joint environment; and (3) identify and communicate the joint mission-oriented training readiness of assigned and allocated forces. The paper suggests that the Department of Defense could establish a Joint Training Readiness Reporting System (JTRRS) based on three principles:

- First, the CINC Joint Mission Essential Task List (JMETL) and Service METL systems could be connected to provide two-way, mission-related information flow between CINCs and operational forces. This would allow the CINCs and Services to communicate more exactly the tasks that the CINCs need the forces and enablers to be able to perform. It will also allow for essential feedback communications.
- Second, the Services could adopt a common measure of training readiness that is mission and task oriented. Such a measure would provide the CINCs a way to understand training readiness on a common, mission-oriented basis.
- Third, the CINCs and Services could employ modern data base management systems and the Global Command and Control System to integrate Service and Joint data bases in a manner that will place responsibility for maintaining the data bases with the appropriate Service or CINC while also providing noncustodial CINCs and Services with access to the data needed to track training readiness.

Such a Joint Training Readiness Reporting System would have the potential to provide the Services and the CINCs the mission-oriented training readiness information they need to meet their responsibilities. JTRRS techniques have the potential to improve the Services' ability to manage the training readiness of their units, as well as of larger organizations such as Army divisions and corps; Navy battle groups and fleets; Air Force wings and air forces; and Marine divisions, wings, and Marine Air Ground Task Forces (MAGTFs).

The JTRRS concept techniques also have the potential to assist the Military Departments and the CINCs in estimating future training readiness. Today there is no way to project training readiness in a reliable way. With JTRRS, it may be possible to project peacetime training readiness a year or so in advance and to project how long it should take either an Active or Reserve Component (AC or RC) unit to train to standard in its METL tasks.

The JTRRS is based on existing Service training management and readiness reporting systems and on the communications concepts being developed for the Global Command and Control System. It would not require major investments in hardware or software.

Much of what needs to be done to build a JTRRS is already underway.

- The CINCs, with the assistance of the Joint Staff J-7, are developing a task-based, mission-oriented system for building JMETLs for every assigned mission.
- The Services already have or are developing task-based training and reporting systems.
- USACOM and the Joint Staff J-7 are identifying JMETLs for JTF battle staffs.
- USACOM and the Joint Staff J-7 are building JTF battle staff training systems.
- The Joint Staff is developing the Joint Automated Readiness System (JARS).

To build an effective JTRRS the following additional steps need to be taken:

- Coordinate and connect the CINC JMETL and Service METL efforts.
- Develop a compatible cross-Service training readiness reporting measure based on CINC JMETLs and Service METLs.
- Include the JTRRS concept in JARS.
- Expand, within each Service, the METL or equivalent systems to cover large organizations, battle staffs, and other enablers.
- Design and conduct tests of any proposed training readiness reporting system in order to demonstrate its feasibility, validity, and reliability.

The concepts discussed in this paper are based on the research conducted as part of a long-term training readiness project conducted by IDA in support of the Office of the Under Secretary of Defense for Personnel and Readiness (OUSD/P&R).

I. INTRODUCTION

As part of a training readiness project for the Office of the Under Secretary of Defense for Personnel and Readiness (OUSD/P&R), IDA has been asked to perform three tasks:

- Propose a set of Service and Joint training readiness indicators that could be used to track the state of current training readiness, to predict future training readiness, and to assess the effectiveness of policies for promoting training readiness based on current indicators and collection methods as much as possible.
- Develop techniques for predicting future levels of training readiness and training accomplishment.
- Design a data base structure for integrating information on Service and Joint training readiness, training experience, resources used in training, and other relevant factors.

This paper examines issues associated with these tasks and suggests an approach for measuring and reporting training readiness using a cross-Service system for assessing and reporting the training readiness of U.S. forces in a Joint environment. In responding to these tasks this paper also addresses the following fundamental questions:

- What is joint training readiness and how does it relate to unit training readiness and to SORTS (the current readiness measurement and reporting system)? [1]
- How should joint training readiness be measured and reported?
- What are the responsibilities of the Services and the CINCs?
- Can future training readiness be predicted?
- What is the link between training readiness and resources?
- Can the management of training and training resources be improved?

II. WHAT IS JOINT TRAINING READINESS AND WHAT ARE THE PROBLEMS?

Readiness is defined as the ability of a unit to deliver the outputs for which it was designed. Training readiness is one component of overall readiness that reflects the ability

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[1] Joint Chiefs of Staff J-7, *Joint Reporting Structure Status of Resources and Training System (SORTS)*, Joint Publication 1-03.3, 10 August 1993.

of a unit to perform assigned tasks to a given standard. Joint training readiness is the training readiness of military units and enablers from different Services working together to accomplish a mission that requires the coordination of their forces. Joint training readiness includes the training readiness of the joint headquarters and the training readiness of the assigned and supporting Service forces working together.[2]

Our research has revealed a number of problems that affect how we think about joint training readiness. These problems and their implications are outlined in Figure 1.

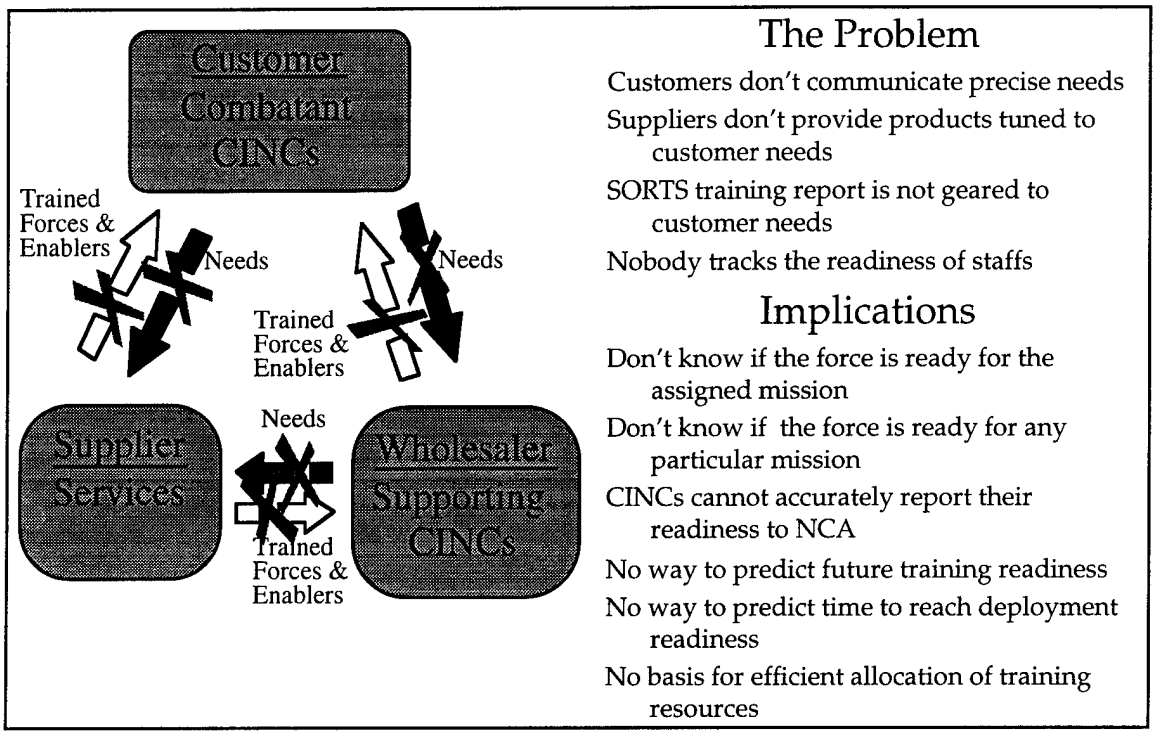

Figure 1. Measuring Joint Training Readiness—Problem Definition

It may help the reader to understand the need for a way to measure and report joint training readiness by explaining the problem in terms of a business relationship. If you think of the combatant CINCs as customers to whom the Services as suppliers must provide forces, then, if the CINCs are to be satisfied by the forces provided, they must create demands (i.e., define requirements) and communicate those demands to the suppliers, the Services. Otherwise the Services may supply forces that are not designed and trained to meet the needs of the customer. You can also think of the supporting

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2 E. H. Burba et al., *Training Readiness in the Department of Defense,* IDA Document D-1517, May 1994, pp. 10–14.

CINCs[3] as wholesalers who must work with the customer to determine his needs (requirements), must then decide what it will take to meet the customer's needs, and finally must communicate those needs to the Services as suppliers.

With current concepts and systems for communicating their needs to the suppliers, the CINCs as customers can, at best, identify only a few of their needs (e.g., the tasks their assigned and supporting forces should be capable of performing) and have no consistent way of informing the suppliers of the specifics of their needs. As a result, the Services as suppliers may not be providing forces capable of performing joint tasks. They almost certainly are not providing forces that are capable of performing tasks that are inconsistent with Service views of their principal functions. In addition, the CINCs as customers have no way of predicting whether the suppliers will be able to provide forces that meet their needs.

The CINCs have access to a report on the training readiness of the basic units assigned or apportioned to them, i.e., SORTS, but the report has a number of problems for both the suppliers and customers:

- The customers have a generic view of training readiness from SORTS, but they do not know a unit's capability to perform joint missions or even specific Service tasks or missions. They do not know the training readiness of large organizations such as Army corps or Navy fleets, the training readiness of logistics organizations, or the training readiness of critical enablers such as supporting CINCs and Service/Joint battle staffs.
- Although the suppliers use a common rating system (C-Ratings) to report the status of their units, these ratings have very different meanings from Service to Service and even within an individual Service. In addition, this system allows the Services to use any of three different and uncoordinated measures of training readiness[4] that make it even more difficult for the CINC to determine if his needs are being met.
- The ratings have little predictive value. External events like personnel turbulence can destroy training readiness overnight.
- Some Services have no generally accepted way to predict the time needed to increase training readiness levels to qualify for deployment ready status. This

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[3] Supporting CINCs include: (1) CINCs who provide services to Combatant CINCs, e.g., CINCTRANS, who provides strategic air and sea lift; and (2) other warfighting CINCs who might provide forces or other support to the CINC who has primary responsibility for a given mission.

[4] The three measures are percentage of mission-essential tasks trained to standard, percentage of crews that are mission qualified, and training time in days required to bring unit performance in mission-essential tasks to standard.

has led to particularly troublesome controversies over the ability of Army National Guard brigades and divisions and Navy Reserve air wings and ships to meet the needs of the customers.

- SORTS provides neither the CINCs nor the Services a way to link mission readiness to estimates of the resources needed to achieve or maintain readiness.
- Nor does SORTS provide the CINCs nor the Services a way to estimate future training readiness.

In other words, because of these problems, the CINCs do not appear to have an adequate ability on which to report to SecDef on their readiness to perform their assigned missions or on the resources they need to better assure their ability to perform their missions.

III. A POTENTIAL SOLUTION

We propose a potential solution to these problems that has three parts, as depicted in Figure 2 and summarized below. We then cover each aspect of this potential solution in greater detail.

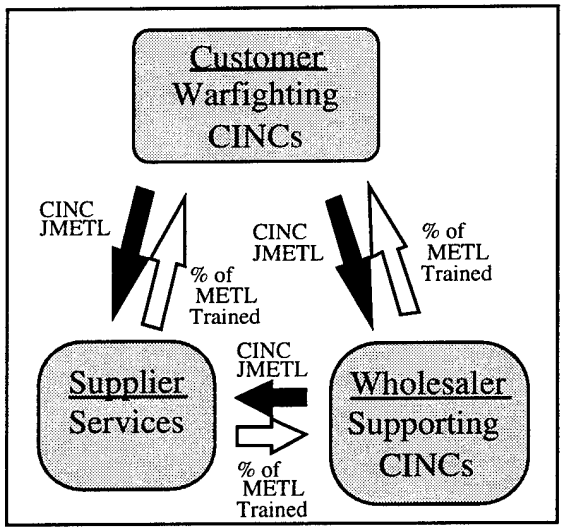

Figure 2. Measuring Joint Training Readiness—Potential Solution

First, the CINC Joint Mission Essential Task List (JMETL) and Service METL systems could be connected to provide two-way, mission-related information flow between CINCs and operational forces. This change would allow the CINCs and Services to communicate more exactly the tasks that the CINCs need the forces and enablers to be able to perform. It would also allow for essential feedback communications.

Second, the Services could adopt a common measure of training readiness that is mission and task oriented. Given the multitude of missions assigned the CINCs and the complex set of tasks associated with those missions, such a cross-Service training readiness reporting measure would provide the CINCs and the Services the mission-oriented training readiness data they need. The most appropriate common measure appears to be the percentage of METL tasks trained to standard. This is one of the three ways the JCS SORTS regulation provides for reporting training readiness.

Third, the CINCs and Services could employ modern data base management systems and the Global Command and Control System to integrate Service and joint data bases in a manner that will place responsibility for maintaining the data bases with the appropriate Service or CINCs while also providing noncustodial CINCs and Services with access to the data needed to track training readiness. This step can be incorporated into the development of the Joint Automated Readiness System (JARS).

A. Connecting CINC and Service Mission Essential Task Lists

Communication between the CINCs and the Services appear to be inadequate in the area of identifying tasks for joint operations—the CINCs have their process for creating METLs and the Services have theirs. There are a number of reasons for the poor exchange of mission, task, and training readiness information between the CINCs, the component commanders and Services, and the forces themselves:

- The CINCs have not had a tool for analyzing their missions in terms of tasks that need to be performed by the forces and enablers under their command.
- The CINCs have recently developed a process for identifying their JMETL, but they do not transmit their JMETL to their components.
- The components have their own METL or METL-like process and train on Service-defined tasks but do not coordinate their METL with the CINCs.

The Universal Joint Task List (UJTL) can provide a basis for enhancing CINC-Service communications. The UJTL lists the full range of tasks that a CINC or the forces assigned to a CINC might have to perform.[5] The CINCs use the UJTL as the basis for creating a JMETL for every mission they are assigned. The CINCs are still in the process of developing this capability and do not use this tool to communicate their needs to the Services. But they could.

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5 *Universal Joint Task List (UJTL)*, Chairman of the Joint Chiefs of Staff Manual, JSM 3500.04, 15 May 1995.

The Services have their own processes for determining the tasks they believe their forces should be capable of performing. Each Service has a different process for building a Service-oriented mission essential task list. Each process allows Service commanders, at one level or another, to tell their units the tasks they should be capable of performing. Each Service process has little or no connection to another Service or to a CINC.

- Army and Marine Corps ground force commanders use a METL process to tell their subordinate commanders the tasks on which they should be training, but neither process is directly linked to the CINCs. Ground unit commanders generally develop their own METL without explicit METL review from the Army or Marine Corps component commander.
- Navy type commanders (e.g., COMSURFLANT, COMSUBLANT, COMAIRLANT) on each coast identify specific tasks in which ships, squadrons, and submarines are to train. Many of the tasks so identified are Navy-specific, e.g., convoy escort, and may not be relevant to CINC missions.
- Air Force commanders of the Air Combat and Air Mobility Commands specify the tasks in which units are to train and manage the training readiness system.
- The Marine Corps air combat element uses a centralized process for determining mission essential tasks, the training syllabus, and the training readiness measures for each type of aviation unit. The Marine Corps is now extending this process to ground forces.

These processes are neither based on CINC JMETLs nor coordinated with them. But they could be.

The lack of communication on training status between the CINCs and the forces might be solved through a system that uses the existing chain of command and links the CINC JMETL and the Service METL processes (Figure 3). In such a system, the CINCs would receive their missions and force allocations, conduct their own mission analyses to identify their JMETLs for each mission, and determine what missions need to be assigned to their subordinate component commanders. They would then assign missions to the component commander and communicate their JMETLs to them. The Services could also use this process to identify "core competencies" (e.g., convoy escort) that remain important even if no CINC has an immediate need for such a capability. The process can also be used to ensure that Service forces are trained in the wide range of tasks necessary for forces that deploy overseas with no certain destination or mission. For example, Naval forces deploying to one CINC's Area of Operations must be ready for reassignment to another CINC and to perform tasks that were not on the original CINC's JMETL.

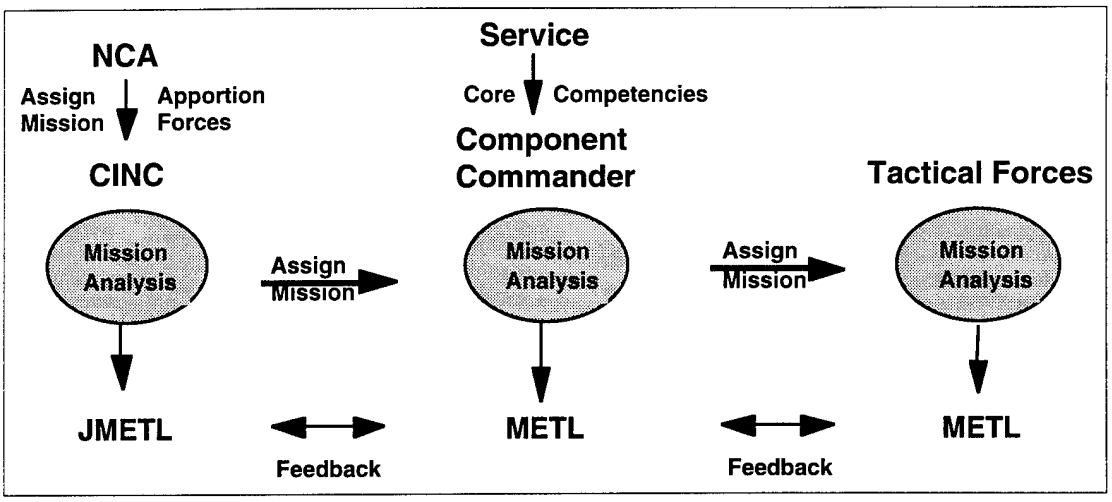

Figure 3. Potential CINC and Component METL Process

The component commanders would conduct their own mission analyses, identify their own METLs for each mission, and assign missions to their subordinate organizations, which in turn would conduct their own mission analyses and identify their METLs. Part of each commander's mission analysis at every level would be to compare his METL with that of his higher commander and to reconcile any differences. Every commander would also be responsible for ensuring that his subordinate elements had developed mission-essential task lists that were consistent with the commander's METL. In this way missions up and down the chain of command would be made consistent with the missions assigned the combatant CINCs, and every commander would have a mission-essential task list that was consistent with the METL of the other commanders in the chain of command. Each commander would be responsible for training his unit in its METL tasks in the conditions and to the standards specified. Knowing the tasks he was responsible for, each commander would also have the ability to identify the resources he needs to train his unit to standard in each task. This proposal is an expansion of current Army training practices described in the Army training manual, FM 25-100.

This process would require that each Service or component commander identify, at least tentatively, the organizations and units, both Active and Reserve, that would be assigned to a CINC for a particular mission. This step alone should help to focus the efforts of subordinate units on specific missions and tasks. It could be particularly important to Reserve units that often do not have a clear idea of the missions for which they should be training. It would also force the CINCs and the Services to resolve conflicts in those cases where, for example, units are tentatively assigned to more than one CINC or

where units are assigned so many mission essential tasks that it becomes impossible for them to meet the training standards.

The mission analysis process could also be used to identify the conditions under which a task must be performed and the standards to which a task must be performed. The feedback process would allow commanders at every level to ensure that they were training their units in their assigned tasks to the conditions and standards that were established by the CINC or by the Service component commander, both of whom have responsibilities for identifying tasks, conditions, and standards. The feedback process would also allow the CINCs and Services to assure both intra- and cross-Service consistency.

Each of the Services either has or is working on a training management system that keeps track of training by tasks and that can associate resources to tasks. In the Army the system is called the Standard Army Training System (SATS). The Navy has a system called the Type Commander (TYCOM) Readiness Management System (TRMS) for surface ships and is developing a similar system for aviation units. The Air Force system keeps track of its pilots' Graduated Combat Capability, or GCC, which is a measure of the tasks in which a pilot or aircrew is trained. The Marine Corps keeps track of the Combat Readiness Percentage, or CRP, of its pilots and keeps track of their status in an automated system for the aviation combat element called Aviation Training and Readiness Information Management System (ATRIMS). The Marine Corps is working on an overall training management system called Marine Corps Training Readiness Support System (MCTRSS). It may be that these systems can be modified to meet the needs of the joint community.

Linking the CINC and Service processes will help to assure the Services and the CINCs that the forces and enablers are training to the appropriate standard for missions, tasks, and conditions apppropriate to the needs of the CINCs. The ability to compare JMETL/METLs between levels will create the opportunity for feedback to ensure consistency. Assuring this consistency is a responsibility of the chain of command that is facilitated by the visibility and the feedback loops the JTRRS provides. For example, a component commander will be able to determine if his units are training in the appropriate tasks, and he will be able to determine how the METL tasks for units in his command compare with the METL tasks for similar units in other Components or Services.

The process of building these links is already underway as Service components learn about CINC JMETLs. The process is proving to be difficult because the CINCs and Services have limited experience in translating CINC missions into explicit Service tasks that must be trained. The CINCs will have to learn to specify a JMETL in terms of strategic and operational tasks that have meaning to each Service as the Services build their

own METLs consisting primarily of operational and tactical tasks. The Services may have to develop new tasks or assign different training priorities as they begin to respond to the specific needs of the CINCs. The Services may find that their systems are incompatible. They will certainly have difficulties initially in translating CINC tasks into Service tasks.

B. A Potential Mission-Oriented Joint Training Readiness Measure

It is not enough to connect CINC JMETLs to Service METLs. The second element of the proposed Joint Training Readiness Reporting System would be a common, mission-oriented joint training readiness measure that could be used by the CINCs, Services, and joint enablers such as JTF battle staffs.

Because each Service uses from one to three measures of training readiness, none of which is specifically oriented to a CINC's mission, the training readiness information that the CINCs now receive does not give them a consistent, mission-oriented view of the training readiness of the units assigned or allocated to them.

A cross-Service training readiness measure tied to each CINC's JMETL would give each CINC a common basis on which to evaluate the training readiness of the forces and enablers allocated to him for a particular mission. It would allow the CINCs and the Services to work together to identify key training tasks, training priorities, and training shortfalls both generally and for specific CINC missions. It would provide a consistent, cross-Service measure of training readiness that reflects the importance of different tasks for different missions for different CINCs.

The Marine Corps Combat Readiness Percentage (CRP) system, Figure 4, is a potential model for such a cross-Service measure. The CRP system is an explicit measure of the percentage of mission essential tasks trained to standard. The Marines have used this system for years for aviation units and are now expanding it to ground units. It has the potential to be applied to staffs, to individuals, to crews, and to units of all sizes.

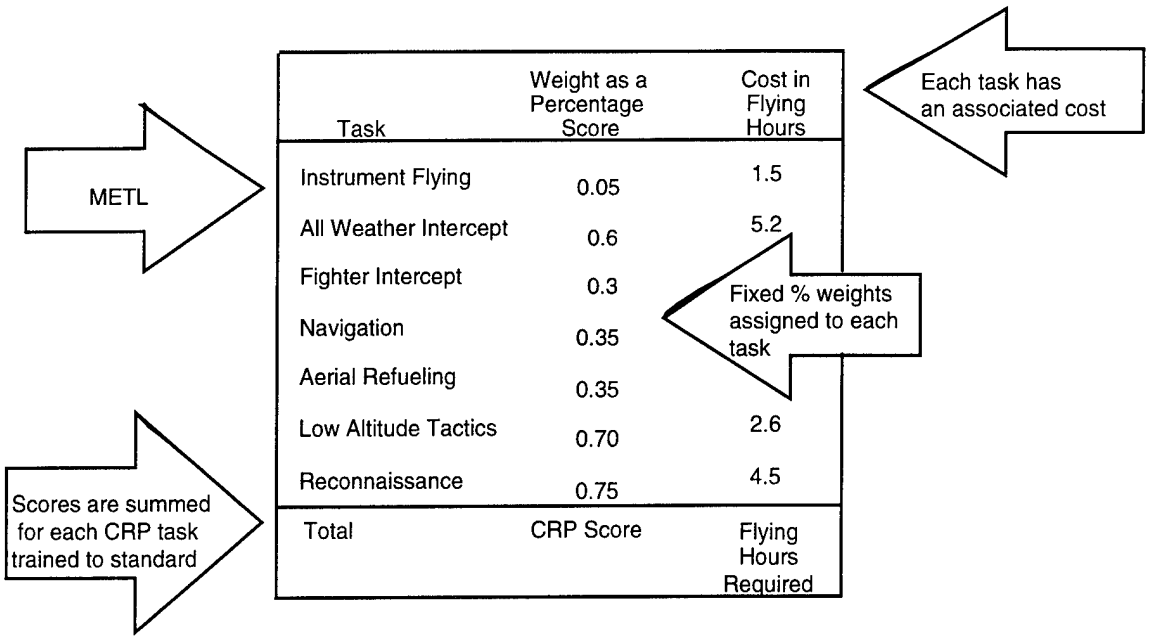

Figure 4. Extract from the Marine Corps Combat Readiness Percentage System, F/A-18 Pilot

A pilot in training begins with a CRP of zero. As training progresses, the pilot performs the prescribed tasks to standard and receives a percentage score that reflects the importance of that task to a his overall ability to perform the flying mission. A pilot who completes basic flying training and basic training in the designated type of aircraft must reach a CRP score of 60 percent before being declared "combat ready" and being assigned to a combat squadron. The pilot continues training in a combat squadron, performing additional tasks, increasing the CRP score and advancing in status. The pilot then becomes "combat qualified" and ultimately is certified "fully combat qualified."

The Marine Corps CRP measure has a number of characteristics that are important in the proposed Joint Training Readiness Reporting System.

- It is based on mission analysis.
- It is task oriented and used to indicate performance to standard for each task.
- It is applicable for both individual and collective training.
- It reflects the impact of personnel turbulence because it is tied to individuals.
- It provides a way to link resources to training readiness because each task has an associated cost, described in terms of both time and money.
- It explicitly identifies the training events, the cost, and the time needed to move a pilot or a squadron from its current training status to a "fully trained" status.

The CRP as currently employed has three major shortcomings for joint training readiness.

- It is based on generic and fixed missions and tasks and does not necessarily reflect the missions and tasks that are of concern to a CINC.
- It is applied to individual pilots and crew members only. There is no CRP rating for battle staffs or for complex organizations containing many different capabilities or systems. In other words, there is a CRP for a 12-aircraft squadron that reflects the average CRP for the pilots in the squadron, but there is no CRP for an aircraft group or wing that includes multiple squadrons and whose overall efficiency depends to some extent on the capability of the group or wing battle staff, the wing/MEF communications units, and the maintenance support units.
- It gives equal weight to all the pilots in a unit and does not explicitly recognize the need to have some pilots who are better trained than others, i.e., flight leaders and mission commanders.

The Navy training system for ships and aircraft and the Air Force systems for aviation units are similar to the Marine Corps system. These systems provide task-specific information that allows component commanders to determine the percentage of mission essential tasks trained to standard and to use that percentage as a measure of the mission-oriented training readiness of individual pilots or squadrons. These systems could allow a distant joint commander to determine the tasks in which a unit has been trained.

What is needed for all of these systems is a way to convey the training information to the joint commander in a useful way. That is the purpose of suggesting a training readiness measure that can be used by all Services and that will have a similar meaning to all Services. Given the existence of multiple CINCs, each with multiple missions, most units will be responsible to multiple CINCs and for multiple missions. As a result, these units need multiple training readiness scores—one for each mission assigned. For example, a unit that had a mission to be ready both for a major conventional war and for a peacekeeping operation might be ready for one mission and not the other. Current readiness systems are not designed to reflect this difference. But they could be.

We have used the Marine Corps CRP measure, augmented by insights garnered from our review of the systems and measures in use by the other Services, as the basis for suggesting a joint training readiness measure we have called the Training Readiness Percentage, or TRP. The TRP is intended to be a DoD-wide measure that would retain the commander's responsibility for assessing the training readiness of his unit while simultaneously allowing all Services to describe their training readiness on a common basis

that would be directly related to a CINC's assigned missions. See Appendix A for detail on how a TRP measuring system could work.

C. Potential Joint Training Readiness Reporting System

A mission-oriented Joint Training Readiness Reporting System involves immense complexities. A unit may be expected to be proficient in multiple tasks that are associated with multiple missions that are assigned to multiple CINCs. For a JTRRS to work, a unit needs a way to keep track of its multiple tasks and to report its mission-oriented training readiness to multiple commanders or potential commanders. Each Service needs to manage its forces and resources to optimize the training readiness of its multiple units and organizations to meet the multiple needs of the multiple CINCs. And each CINC needs a way to keep track of the readiness of the forces allocated to each of his multiple missions. These requirements would have made the implementation of such a system impossibly complex and burdensome prior to the development of modern computers, data base management systems, and communications systems. The existence of these tools appears to make this concept feasible.

Accordingly, we propose that the Joint Training Readiness Reporting System (JTRRS) use modern communications and data base management systems to integrate Service and joint data bases and to provide communications up and down the chain of command. These systems would be employed to keep track of multiple JMETLs and METLs, to keep track of training status by task, and to allow both CINCs and Services to maintain a real-time record of mission training readiness by CINC, by mission, by unit.

Such a system might work as follows:

1. Each CINC and Service would keep track of pertinent data.

- Each CINC would keep track of his missions, of the associated JMETLs for each mission, and of the training by task of those forces and enablers for which he is responsible. For example, each CINC would keep track of the training readiness of his battle staff and supporting communications units.
- Each Service would keep track of the missions, associated METLs, and training, by task, of the forces and enablers for which that Service is responsible. For example, the Air Force would keep track of all task training by units and would also keep track of the task training of the Air Operations Centers that support the component commanders.

2. Once the JMETLs/METLs and the task training status are in the appropriate data bases, any participant with approved access would be able to compare JMETLs and METLs to ensure compatibility and to compute a mission-oriented training readiness status.

- Each participant could be authorized access to some of the data in every other participant's data base. For example, a CINC might be given access to Service METLs and training readiness data at every level from that of large organizations down to the battalion, ship, or squadron level but not at lower levels. The CINCs will be able to look at the Service METLs to assure that the organizations assigned or allocated to them are training in the appropriate tasks. The CINCs will also have access to data that will allow them to compute the mission-oriented training readiness of assigned and allocated forces.
- In most cases the CINC will most want to know the mission readiness of large organizations like Army divisions or Navy battle groups—a capability he does not currently have. Additionally, he might want to know the mission readiness of units at the level of battalions, ships, and squadrons.
- The Services could have access to the CINC data bases in order to identify each CINC's mission-oriented JMETL and the conditions and standards associated with each task.
- As they build force packages for contingencies, the Services and the CINCs could have access to each other's data bases in order to identify the units best trained in an emerging mission.

The impact of this system at the unit level should be small. Virtually all units today use computers to keep track of training on a task basis. All units keep track of their SORTS status and send the data to a higher headquarters. Under this system, units would continue to send their training status data to their higher headquarters. With new software that provides simple formats and fills out the forms, unit reporting should be significantly simplified. Battle staffs and other enablers that do not currently have METLs or track training readiness would have to develop a capability for both and will input their task training status to the system. (The development of training readiness standards for battle staffs could result in significant improvements in overall training readiness.[6])

At higher headquarters this system would replace the existing SORTS. Tests will be required to determine the overall impact on workload at these levels. Although the initiation of any system adds workload, it may be that the JTRRS can be used to assist in

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6 For insights into the problems of battle staff training, see Horowitz et al., *Unit Training in the Gulf War*, IDA Paper P-3087, Institute for Defense Analyses, December 1995.

other areas such as mission planning and that the overall impact on workload will be minimal.

IV. ROLE OF TRAINING EXERCISES, ASSESSMENTS, AND EVALUATIONS

The TRP system should be able to provide training readiness information in a form that is most useful to commanders at all levels who need to know the training readiness of their subordinate units. This system would be particularly useful to commanders of joint forces who do not now have a way of determining mission-oriented training readiness and who will generally be satisfied with a number like the TRP to which experience and changes over time will provide context.

Many of the TRP scores, especially at the unit level, will be tied to objective measures such as gunnery scores and bombing scores or percentage of a unit that is MOS qualified. There will be little argument about these scores. In many other areas, however, the TRP score will depend on the judgment of commanders and other subject matter experts. Given the subjective nature of these scores, there may be reason to question the reliability of the TRP scores that result. Thus, to ensure the reliability and validity of the TRP score, the JTRRS must be tied to a system of exercises, assessments, and evaluations that will provide two key assurances.

First, there must be a way for all participants to be confident that the JMETLs and METLs include tasks that are relevant to the missions assigned. Today, there is no clear linkage between the strategic and operational tasks that a CINC will likely identify for his JMETL and the operational and tactical tasks that a Service unit commander will identify for his METL. Exercises, both joint and single-Service, can allow CINCs and Services to build this crucial linkage as both develop an understanding of the tasks at every level that are critical to the mission.

Second, the training scores assigned for each task must actually reflect the level of training attained for that task, and the relative importance assigned to tasks and subunits must be valid. Exercises, assessments, and evaluations can provide assurance of both.

Each Service regularly conducts training assessments such as the Army Training and Evaluation Plan (ARTEP), the Navy Exercise Evaluation (ExEval), the Air Force Operational Readiness Inspection (ORI), and the Marine Corps Combat Readiness Evaluation System (MCCRES). CINCs also conduct frequent exercises that include increasingly sophisticated assessments.

Periodic assessments and evaluations will allow CINCs and Services the opportunity to validate the training scores that are assigned by organizational and unit commanders. For example, a problem is indicated when a Navy ship that reports high levels of training on its METL is given a poor grade on its Exercise Evaluation. It may be that the commander is overly enthusiastic about the training level of his ship. Or it may be that the standards being applied to the tasks in question are unreachable. In either case, a disconnect of this kind indicates a problem that needs attention.

This is also true with regard to the weights assigned to individual tasks or subunits. Exercises and assessments provide commanders at every level an opportunity to reconsider their judgments about the relative importance of both the tasks and the subunits to mission accomplishment. Over time these observations will likely lead to changes in JMETLs and METLs.

Assessments are also important for validating current doctrine and training concepts and for developing new doctrine and concepts.

Valuable as assessments are, it does not appear reasonable for a real-time training readiness reporting system to rely exclusively on outside assessments and evaluations to determine the level of task training. There are four reasons for this:

- Exercises are not conducted often enough to reflect the impact of personnel turbulence and the forgetting factor.
- Exercises are not comprehensive enough to cover all of the units, subunits, and individuals that are critical to understanding training readiness.
- Exercises cannot cover a wide enough spectrum of tasks to reflect the full range of missions for which units are responsible.
- Assessments and evaluations are more subject to misuse if they are used routinely to measure training readiness. The danger in using training assessments in reporting training readiness is that the report may be seen as giving a commander a grade that could reflect negatively on his career if he reports a low level of training readiness that, more often than not, is a reflection of factors other than the commander's skill, knowledge, or ability.

For these reasons, the evaluation and reporting of day-to-day training readiness must remain the responsibility of the commanders who should report their training readiness on the basis of tasks trained to standard.

V. POTENTIAL CONTRIBUTION OF JTRRS TO TRAINING AND PERSONNEL MANAGEMENT

The Joint Training Readiness Reporting System has the potential to assist the Military Departments and the CINCs in exercising their training and personnel management responsibilities. One of the key issues facing the DoD is the need to estimate future training readiness. Today there is no way to project training readiness in a reliable way. With JTRRS, it may be possible to project peacetime training readiness a year or so in advance and to project how long it should take either an Active or Reserve Component (AC or RC) unit to train to standard in its METL tasks.

The key elements associated with projecting training readiness are the knowledge of a unit's actual training status, an understanding of how long it takes to train a unit in a particular task, and a projection of the training and personnel resources that will be available. With experience in using the JTRRS, the Services and CINCs should be able to develop an understanding of the time and resources needed to train a unit to standard in tasks assigned that unit. Knowing what it takes to train a task to standard and having an ability to project the availability of necessary resources can lead to an ability to project training readiness.

Projections of the availability of funds to pay for the fuel, training ammunition, temporary duty and travel pay, and the other things a unit needs to train should be available today as annual budgets are allocated among recipients. Training resources also include training facilities and time. Training schedules should provide this information. For example, theArmy projects the units that will attend the National Training Center several years in advance, and the Navy maintains multi-year deployment schedules for aircraft carriers, ships, and squadrons.

The ability to project the availability of personnel resources—the gains and losses of trained and untrained or partially trained people—should allow a unit to determine what training needs to be conducted in order for the unit to maintain its training status. For example, a unit that anticipates losing many of its trained people and replacing them with only partially trained people will know that it needs to do more training in order to maintain its training status.[7] If the unit also knows that it will not have the training resources it needs to conduct that training, then it will be able to project a decline in its training

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7 As a matter of policy some Services only partially train their recruits in schools and expect them to learn the rest of their jobs through "on the job training." Other Services fully train their recruits before sending them to their first unit.

readiness. On the other hand, a unit that anticipates low turbulence and adequate training resources should be able to project an increase in training readiness. Finally, a unit with low turbulence might be able to maintain its level of training readiness even if its training resources are reduced.

JTRRS should also enhance the ability of a unit—AC or RC—to project the pre-deployment[8] training time it will need in a crisis or other overseas operation. Today Army and the Marine ground forces, relying on commander's estimates, have no systematic way to project pre-deployment training times.[9] This causes major difficulties, especially in the Army, where the AC and the RC can not agree on the amount of pre-deployment training time that Army National Guard combat units need before they can be considered ready for deployment. This problem also exists for the AC where, for example, a unit given an emergency mission such as the recent operation in Haiti may have to change its METL and train in new tasks before it can be considered ready for deployment.

Given a systematic, task-based understanding of a unit's training readiness, an understanding of the tasks that need to be trained for a projected operation, and an estimate of the time and resources needed for training each task, the Services may be able to predict pre-deployment training time and future peacetime training readiness. In other words, given certain assumptions about the availability of personnel and training resources, the JTRRS could include two additional indicators:

- An estimate of how long it will take a unit to go from its current training readiness status to some other status—either 100 percent TRP, or to a threshold TRP, or to an appropriate TRP for some other mission.
- The future training readiness of a unit given assumptions about the future availability of personnel and of training resources.

Both projections could be maintained in the same data system as the standard JTRRS.

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8 This paper employs the term "pre-deployment" to refer to training that both AC and RC units require prior to deployment in a crisis or other overseas operation. The term "post-mobilization," which generally refers only to pre-deployment of RC forces, will be avoided because it implies that only RC units require additional training prior to deployment. Recent operations from the Gulf War to Haiti have shown that both AC and RC units require pre-deployment training, especially when a unit must train to a new METL.

9 The Army's TRADOC Analysis Center is currently developing a "Training Mix Model" that is based on task training and may provide a way to calculate pre-deployment training times on an objective basis.

The use of these indicators could help to identify the impact of the personnel management system on unit training readiness. The JTRRS should allow unit commanders to identify the specific impact of turbulence on their units and may lead to more effective or more sensitive personnel policies. This system, for example, might be able to demonstrate the relative impact on training readiness of such policies as the individual replacement system compared with the Army COHORT system or the Marine Corps Unit Deployment Program—two policies designed to enhance unit readiness and cohesion.

The JTRRS could also help the Services and the CINCs manage other training resources. When component and unit commanders know their missions and the tasks to be trained, they will have an explicit basis for allocating training funds and other resources. Unit commanders will have a credible, objective basis for requesting training resources. CINCs will know which units are trained in which tasks and will have a basis for discussing training resource allocation decisions with the Services. Units, both AC and RC, can be told to maintain different levels of training readiness and can be held accountable to those levels. Finally, wartime planning can include specific plans and resources for pre-deployment training for both AC and RC units.

VI. BUILDING A JOINT TRAINING READINESS REPORTING SYSTEM

Much of what needs to be done to build a JTRRS is already underway.

- The CINCs, with the assistance of the Joint Staff J-7, are developing a task-based, mission-oriented system for building JMETLs for every assigned mission.
- The Services already have or are developing task-based training and reporting systems.
  - — The Army and Marine Corps are developing task-based training reporting systems for ground forces.
  - — The Navy is in the process of converting to a METL system and the TYCOM Readiness Management System (TRMS) will provide Navy component commanders task-based training readiness information for ships, submarines and aircraft.
  - — The Navy, Air Force, and Marine Corps have been using task-based training readiness systems for aircraft for years.
- USACOM and the Joint Staff J-7 are identifying JMETLs for JTF battle staffs.

- USACOM and the Joint Staff J-7 are building JTF battle staff training systems.
- The Joint Staff is developing the Joint Automated Readiness System (JARS).

But this is not enough. To build an effective JTRRS the following jobs need to be done:

- Coordinate and connect the CINC JMETL and Service METL efforts.
- Develop a compatible cross-Service training readiness reporting measure based on CINC JMETLs and Service METLs.
- Include the JTRRS concept in JARS.
- Expand, within each Service, the METL or equivalent systems to cover large organizations, battle staffs, and other enablers.
- Design and conduct tests of any proposed training readiness reporting system in order to demonstrate its feasibility, validity, and reliability.

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Appendix A

POTENTIAL DESIGN OF A TRAINING READINESS PERCENTAGE MEASURE

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Here is how a TRP scoring system might work.

1. The Basic Training Readiness Measure

As part of the mission analysis process, commanders could assign weights or values to each JMETL or METL task based on the importance of each task to the accomplishment of their assigned missions. The weight assigned each task would be the TRP METL percentage score for that task. By definition, the sum of the weights assigned to every task in a METL would be 100 percent. The actual TRP score for each task would be obtained by multiplying the absolute score for the task by the weight assigned the task. For example, a unit that scores an absolute score of 75 percent on a task that has a TRP weight of 33 percent would receive a TRP score of 25 (75 percent times 33 percent) for that task. The unit would add that score to its TRP for that mission. A unit that is fully trained for a mission would receive the maximum TRP score for that mission—100 percent. The weights assigned to tasks at each level would be subject to review as part of the JMETL/METL consistency assurance process described above.

The score for each task would be determined in essentially the same manner that training readiness scores are determined today. In some tasks where objective measures are possible, as in gunnery, the score could be derived directly from the score obtained on the firing range. In tasks where objective scoring is not possible, the commander's judgment, supplemented perhaps by subject matter experts, would be the basis for determining an absolute score for a task.

Table A-1 shows how a commander with three missions and the same three tasks[1] for each mission might assign different weights to each task for each mission, resulting in a different TRP score for each task and each mission. For each task the unit or subunit would receive an absolute score reflecting the training status on that task. If the task is fully trained to standard, the score is 100 percent. If the task is only partially trained, the

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[1] These tasks might be Primary Mission Areas for Navy ships and aviation units.

score is less than 100 percent. If, for task a, the unit receives an absolute score of 75 percent and the task weight for mission 1 is 33 percent, then the TRP score for that mission is the product of 75 percent and 33 percent, or 25 percent. For mission 2, regardless of the absolute score, if task b is not relevant to the mission, then the weight is zero and the TRP score for that task for that mission is zero. The unit is fully trained in task c and gets full credit for that task for each mission. Since task c is relatively unimportant to Missions 1 and 3, this high absolute score does not translate into a high TRP score for these missions. The overall unit TRP score for each mission would be the sum of the TRP scores for each task.

Table A-1. Sample TRP Calculation for a Unit or a Subunit with Three Missions (percent)

Tasks for each mission	Absolute score for each task	Mission 1		Mission 2		Mission 3	
		Task Weight	TRP Score	Task Weight	TRP Score	Task Weight	TRP Score
a	75	33	25	50	38	10	07
b	40	50	20	00	00	75	30
c	100	17	17	50	50	15	15
TRP Score for each mission			62		83		52

Should a commander with many missions have difficulty assigning weights to each mission, alternative approaches might be used. If tasks were placed into three different bands, for example, the first band might be for all those tasks that are deemed "essential" and that, taken together, account for the major part of the mission—say 65 percent. The second band might be for all those tasks that are important but not essential and that, taken together, might account for 25 percent of the mission. The third band might be for all other tasks that are identified in the mission analysis for a particular mission and that, taken together, account for 10 percent of the mission. In this approach, the scores for all the tasks in each band would be summed and multiplied by the weight assigned each band—65, 25, or 10 percent. The sum of the score calculated for each band would be the TRP for that mission. This system could also incorporate filters that would identify "war stoppers" that do not meet some minimum level.

Other techniques for assigning weights might also be used. One possible approach, called the Analytic Hierarchy Process[2] or AHP, allows the commander to make a series of

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2 Saaty, Thomas L., The Analytic Hierarchy Process, McGraw Hill, New York, 1980.

pair-wise comparisons of the relative importance of a series of tasks. Given a METL, for example, a commander could explicitly make a series of judgments about the relative importance of each task when compared with each other task and the computer program would compute the weights. This subroutine could be built into the METL-building software and could quickly become a routine task for commanders as they build their METLs for each of their assigned missions.

Whichever approach is used, a TRP score for each mission might be all of the detail that a CINC might see as he looks at the training readiness of his subordinate units. This would be an improvement over the current SORTS because, with SORTS, the CINC sees only a generic C-rating for training. In the JTRRS he could see a mission-oriented TRP score for the battalions, ships, and squadrons assigned or allocated to him. While this would be a significant improvement over the current SORTS, it would not take advantage of the full potential of the TRP and the JTRRS. The JTRRS offers far more potential for both CINCs and Services to understand and influence the training readiness of the forces and enablers for which they are responsible. The rest of this section discusses a way the JTRRS might be used to provide a better summary measure of the training readiness of larger organizations, both single-Service and joint, and of battle staffs.

Appendix B discusses alternative ways the Services might use the JTRRS to provide greater insight into and influence over training readiness from the individual level to the largest organizations in each Service.

2. An Advanced Training Readiness Measure

A more complete JTRRS would allow for building mission-oriented TRP scores for large organizations such as Army divisions and corps, Navy battle groups and fleets, Air Force wings and air forces, Marine divisions, wings, and MAGTFs.

One key to using the TRP as part of an advanced training readiness measure is for the commander to assign weights to subelements of the organization according to the commander's estimate of the contribution the subelement makes to the commander's ability to perform a particular mission. The process of weighting the components of a unit could be conducted as part of each commander's mission analysis process and could be reviewed as part of the JMETL/METL consistency assurance process. The technique for weighting subelements could be essentially the same as that used for weighting METL tasks.

It is the desire for a measure of mission-oriented training readiness that leads to a need to assign a weight to subelements. In some organizations, for example, the ability of one part of an organization might be more important to one mission and less important to

another. An organization with both a warfighting and a peacekeeping mission would likely assign different weights to different units or subelements, based on the contribution each made to the mission. For example, units capable of providing fire support to an Army division might be more important in warfighting than in peacekeeping and would therefore have a larger weight for one mission than for another. Table A-2 shows how the different subelements of an organization like an Army division might have different weights.

Table A-2. Illustrative Weights That Might be Assigned to Different Parts of an Organization for Different Missions (percent)

Subelements	Mission 1 Weight	Mission 2 Weight	Mission 3 Weight
Commander & Battle Staff	40	25	10
Combat Elements	24	40	30
Combat Support Elements	13	20	10
Combat Service Support Elements	23	15	50
Total Weight	100	100	100

Another important part of an advanced training readiness measure is a TRP for a battle staff. Currently, none of the Services or CINCs report on the training readiness of the battle staffs on whom they depend for the efficient employment and support of their forces. Although they do not report on the training readiness of these staffs, the Services clearly understand the importance of these staffs and make significant efforts to train them. The Army conducts the Battle Command Training Program for training division and corps battle staffs. The Navy trains and assesses battle group battle staffs in a series of exercises that precede every battle group deployment. The Air Force conducts Blue Flag staff exercises to train wing and air force battle staffs. The Marine Corps has a special training program for training MEF battle staffs. Given this training focus, it is just one more step for the Services to report on the training readiness of their battle staffs. In general, each Service could determine a battle staff TRP in essentially the same way it determines a TRP for the basic combat unit. The CINCs could use this same approach for their battle staffs.

Having calculated TRPs for all the subelements of an organization and assigned weights to each subelement, the calculation of a TRP for an organization is straightforward. Here are two examples of how a TRP score might be built for an Army division or a Navy battle group. These examples are provided only for illustration. Each Service would be responsible for determining how it would calculate TRPs for the units it provides a CINC.

Calculating a division TRP:

1. Calculate a TRP for each battalion-size unit in the division.
2. Calculate TRPs for brigade and division battle staffs and for any other special subelement of the division.
3. Assign a weight or a priority to each element of the division determined by the importance of its training readiness to the overall success of the division in the mission.
4. Multiply each TRP by its assigned weight and sum the results to create a division TRP.

Calculating a battle group TRP:

1. Build a TRP for each element of the battle group—the ships and squadrons.
2. Assign a weight or a priority to each element of the battle group determined by the importance of its training readiness to the overall success of the battle group in the mission.
3. Multiply each TRP by its assigned weight and calculate a battle group TRP.

Similar calculations could be made for corps; fleets; wings and numbered air forces; and Marine divisions, wings, and MAGTFs. The TRP at each level would be based on the TRPs of subunits. CINCs and component commanders could access this information at whatever level they deemed appropriate. A CINC who is concerned about a carrier battle group's training readiness for a particular mission might be satisfied with a single number or color—green, amber, red—for the battle group. Should the TRP score not be as high as necessary, the CINC might ask to see greater detail in order to determine whether the battle group has adequate training readiness or whether there are ways to improve its training readiness.

A TRP for a Joint battle staff could be calculated using the same process, based on the training level of individuals as shown in Table A-3 or of staff sections as shown in Table A-4. First, determine a TRP for key individuals or staff groups. Second, assign weights to each individual or group according to their contribution to the mission. Third, calculate a battle staff TRP. A battle staff TRP calculated on either basis would reflect the level of individual training as well as collective staff training. It would also reflect staff turbulence. Since the TRP of an individual staff member can be tracked, battle staff readiness could be predicted based on anticipated personnel gains and losses. The tables also reflect the ability to keep track of training resources associated with each battle staff task and, thereby, to link training readiness to resources.

Table A-3. Illustrative TRP for a JTF Battle Staff Member

Training Required by Task or Training Event	Max TRP Score for Each Task or Training Event (%)	Resources Required to Train Each Task or to Complete Each Training Event
Service training - MOS qualified, individual training appropriate to the position, e.g., CGSC	50	TBD
Special training for joint operations, e.g., Armed Forces Staff College	10	TBD
Trained to individual baseline proficiency in basic tasks in assigned joint staff position	10	TBD
Trained to baseline proficiency in basic tasks as part of a JTF staff section	10	TBD
Trained to advanced proficiency in assigned tasks as part of a JTF staff	10	TBD
Trained to advanced proficiency in assigned tasks as part of a JTF staff in a JWC exercise in the last 6 months	10	TBD
Total TRP Score	Sum of TRP Scores	Total Resources

Table A-4. Illustrative TRP for a JTF Battle Staff Section

Training Required by Task or Training Event	Max TRP Score for Each Task or Training Event (%)	Resources Required to Train Each Task or to Complete Each Training Event
% of staff section MOSQ times 50%	50	TBD
% of staff section with special joint training, e.g., Armed Forces Staff College times 10%	10	TBD
% of staff section trained to baseline proficiency times 10%	10	TBD
% of staff section trained to advanced proficiency times 10%	10	TBD
% of staff section trained to advanced proficiency in assigned tasks as part of a JTF staff in a JWC exercise in the last 6 months times 20%	20	TBD
Total TRP Score	Sum of TRP Scores	Total Resources

3. Assigning Weights to Units, Subunits, and Tasks

Assigning weights to units, subunits, and tasks is a way to reflect the importance of different units and tasks to different missions. Responsibility for assigning weights should probably span the chain of command, with each commander deciding the weights to be assigned to subordinate units and to tasks in his JMETL/METL as part of the mission

assigned to subordinate units and to tasks in his JMETL/METL as part of the mission analysis process. In some cases, on the other hand, some weights might be determined by the Services and might remain relatively constant from mission to mission.

Given the complexity of large-scale organizations such as corps and fleets and even of battalions and ships, the determination of mission-oriented weights is a significant job. The traditional technique for assigning weights would be for the commander and his staff to work out the weights as part of the normal staff process. With a small number of tasks or subelements to weigh, it may be relatively simple for a commander to assign weights. With a larger number of tasks or subelements, it may be more appropriate to use a grouping or banding concept in which tasks or subelements are placed into three or four groups or bands with each group or band having a weight. Alternatively, there are mathematical processes and computer software programs that may simplify the process.

As part of our research on the TRP concept we asked a retired Marine Corps major general, an aviator who was familiar with the Marine Corps CRP procedures and with the operation of a Marine Expeditionary Force, to devise a set of weights that could be appropriate for a MEF engaged in a major amphibious attack. The large number of battalion- and squadron-size units in a MEF made it impossible for our expert to make a set of weighting judgments by inspection. Therefore, we provided him a software program known as "Expert Choice"[3] to aid in this task. Expert Choice automates the Analytic Hierarchy Process discussed above.

After spending a day learning the computer system and convincing himself that it was possible to make relative judgments about the importance of the subelements of a MEF to the accomplishment of a particular mission, our user was able to make a set of judgments beginning at a low level—squadron in the Air Combat Element and battalion in the Ground Combat Element—that allowed him to assign weights to all the units in the entire MEF. The intellectual process he used was similar to the process the Marines use in their biannual review of the Training Readiness Manual that prescribes the tasks in which each type of Marine aircraft pilot must train annually. While acknowledging that an individual with a ground force background might make slightly different judgments, he concluded that it would be possible for a MEF commander or his staff to make a set of judgments about the relative weights to be assigned all the elements of a MEF for a range of missions. He also supported the concept that weighting tasks according to missions would be an improvement over the Marine Corps CRP in reporting mission-oriented training readiness.

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3 "Expert Choice," Expert Choice, Inc., Pittsburg, PA., 1992 (Software program).

A process for making judgments of this kind could be incorporated into JTRRS and would allow commanders at every level to assign appropriate weights to units under their command and to tasks in their JMETL/METL. The weights assigned would, of course, be subject to review by the chain of command, just as the JMETL/METLs themselves would be. While this process may seem daunting at first, weights for tasks and subelements, once assigned, are likely to be relatively stable with changes essentially on the margin. Changes in weights for tasks and subelements would also be a way for commanders to communicate their insights and concepts rapidly throughout their commands

Commanders might also establish minimum thresholds for tasks and might flag specific tasks as "war stoppers" that the commander believes are so important that a failure to perform them adequately would jeopardize the success of the mission.

Appendix B

POTENTIAL SERVICE USES OF JTRRS CONCEPTS

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The primary purpose of developing the concept of a Joint Training Readiness Reporting System has been to enhance the ability of the CINCs and the Services to communicate in the areas of METLs and of unit training readiness. For this reason the basic paper does not attempt to suggest how the Services might assess the readiness of their units—battalions, ships, squadrons, and support units—and of enablers—battle staffs, etc.

Each of the Services has developed its own approach to assessing training readiness. Our recommendations in the basic paper address these techniques only to the extent that we recommend all Services use one basis for reporting training readiness—the percent of mission essential tasks trained to standard—and one measure, the Training Readiness Percentage. Serendipitously, our research has also led to insights into ways the Services might use JTRRS techniques to enhance their ability to manage and assess training readiness at all levels from the individual to the largest Service organization. This appendix describes those insights.

There are three concepts that a Service might wish to employ in the design of its training management and training readiness reporting system:

- Calculate the training readiness of key individuals, crews, teams, or other subelements and use these TRP scores as the basis for assessing the training readiness of units and enablers whose readiness must be reported to a CINC.
- Design the Service training readiness system to reflect the impact of personnel turbulence on the ability of the unit or the subelements of a unit to perform its tasks to standard. Just as the Air Force GCC or the Marine Corps CRP systems reflect the turbulence of individual pilots on the squadron's readiness, the TRP of a tank crew could reflect the personnel turbulence of the crew. And the TRP of a Navy ship could reflect the personnel turbulence in the crew as a whole or the TRP for a Primary Mission Area could reflect the personnel turbulence of key crew members.
- Assign a weight to subelements, or individual unit members according to the contribution that the subelements, or individual unit member makes to the unit's ability to perform a particular mission.

We have developed some examples of how these key ideas might be applied within the Services.

The first concept is to develop a TRP score for key individuals, crews, or teams. This concept is already partially in use in aviation units in the Navy, Air Force, and Marine Corps which have the equivalent of TRP scores for pilots. But the training readiness of pilots alone may provide insufficient information even for aviation units. There are other key individuals and teams that are essential and that might have TRPs assigned. In addition, individual TRPs could be carried with the individual from one assignment to another. For example, Marine aviators carry their CRP score from one assignment to another and their CRP score is immediately incorporated into a new unit's overall CRP score.

The most important single individual in a unit or subelement of a unit is generally the commander. A Service might calculate TRP scores for unit or subelement commanders, e.g., for the Army and Marine Corps at the squad/crew level and perhaps through the company or battalion level (Table B-1). A leader's TRP score might be incorporated into the TRP score of his unit. Squad, platoon, and company commanders might have TRP scores that are incorporated into a platoon or company TRP score. A battalion or squadron commander's score might be factored directly into his unit's TRP or might be incorporated into the battalion/squadron battle staff TRP score. On a ship, the ship's captain and the department heads might have TRP scores that are incorporated into a ship TRP score.

A leader's TRP would likely be based on a commander's previous experience and training plus the experience the commander has in command of the unit in question. In other words, a newly arrived commander might have a lot of schooling or previous unit experience, but could not have a high TRP until actually taking the unit through a number of training events. The use of a TRP for commanders would allow a Service to defect the reduction in unit readiness that is caused by the departure of the old and the arrival of a new commander.

The TRP for the subelements of a unit, such as an infantry squad or a maintenance team, would most likely be determined entirely within the unit. The process of calculating a squad or team TRP, for example, would primarily involve the automation of records that are already kept in the unit by squad/team leaders, and unit training sergeants.

Table B-1. Illustrative TRP for a Unit Commander

Training Required by Task or Training Event	Max TRP Score for Each Task or Training Event (%)
MOS qualified	50
Previous experience and special training for commanders - command course, etc.	20
Tasks trained to standard while in command, e.g., workup and deployment for a Navy ship captain ends with a TRP = 100%	30
Total TRP Score	Sum of TRP Scores

Tables B-2 and B-3 illustrate possible approaches for a tank crew and an infantry squad. Just as a Marine pilot has a CRP of 60 percent upon arriving in the combat unit having completed basic flight training and training in the replacement training squadron, a member of a tank crew or infantry squad might have an individual score of 50 percent upon arriving at the unit with appropriate MOS training for an assigned position. This score could be reduced if the crew or squad number were not fully trained for the assigned position or had been away from the position for some time and in need of retraining.

Table B-2. Illustrative TRP for a Tank Crew

Training Required by Task or Training Event	% of Crew Members Still Assigned	Max TRP Score for Each Task or Training Event (%)	Resources Required For Each Task or Training Event
Avg. individual TRP of crew members	NA	50	TBD
TC/Gunner score on COFT	TBD	10	TBD
Tank Crew score on Table VIII	TBD	10	TBD
Tank Crew Score on Table XII	TBD	10	TBD
Platoon qualified - perform basic platoon tasks to standard as a crew	TBD	10	TBD
Platoon qualified - perform advanced platoon tasks to standard as a crew	TBD	10	TBD
Total TRP Score		Sum of TRP Scores	Total Resources

The first 50 percent of a crew/squad TRP score could be the average individual score of the crew/squad members. The other 50 points of the possible TRP score would be based on mission related tasks that the crew/squad had performed as a crew/squad. The TRP score for each task could be adjusted to reflect crew and squad turbulence by multiplying the percent of crew or squad members still assigned at the reporting date times

the TRP score for that task. The score could also be reduced as a function of the time expired since the task was trained, e.g., the gunnery score of a tank crew might be reduced over time, or, as in the Marine example, the score could go to zero if the task is not revalidated after a set period of time. Some TRP scores would be directly derived from objective scores such as on firing ranges. Others would be derived from subjective judgments of commanders. These crew/squad tasks could be performed in any order depending on the training schedule and on the movement of personnel in and out of the crew/squad.

Table B-3. Illustrative TRP for an Infantry Squad

Training Required by Task or Training Event	% of Squad Members Still Assigned	Max TRP Score for Each Task or Training Event (%)	Resources Required For Each Task or Training Event
Avg. individual TRP of squad members	NA	50	TBD
Percent of squad firing expert on basic weapon	TBD	10	TBD
Squad qualified - perform basic squad tasks to standard	TBD	10	TBD
Squad qualified - perform advanced squad tasks to standard	TBD	10	TBD
Platoon qualified - perform basic platoon tasks to standard as a squad	TBD	10	TBD
Platoon qualified - perform advanced platoon tasks to standard as a squad	TBD	10	TBD
Total TRP Score		Sum of TRP Scores	Total Resources

The determination of the components of a TRP and the training events required to achieve the TRP scores would also allow the Services to identify the training resources required to achieve that level of training. Just as the Marine Corps has identified the average number of flying hours and sorties that are needed for a pilot to train to standard on a particular CRP task, the Services could identify the resources to train a squad, or a larger unit to standard on the tasks that make up the TRP—the Standard Army Training System (SATS) is intended to perform this function for the Army and the TYCOM Readiness Management System (TRMS) for the Navy. Initially the resource requirements will be estimates. With experience these estimates will become increasingly accurate.

The second concept calls for the TRP to reflect the impact of personnel turbulence on training readiness. The TRP can be designed to reflect the impact of personnel

turbulence on a unit's training readiness. Individual TRP scores that reflect training in the unit and are incorporated into a unit TRP score will automatically affect the unit TRP score. For crews and teams, etc., rules dealing with turbulence would have to be developed. A Service might decide to use a simple percentage rule like that illustrated in Tables B-2 and B-3. Alternatively, a Service might decide to have special rules for key personnel in a crew or team. For example, a task involving a tank commander and gunner might go to zero when either one leaves the crew. For a task involving an entire crew/squad, the TRP score might be reduced by a variable fraction depending on the Service view of the contribution of that person to the performance of the task. The loss of a squad leader or tank commander would likely have a larger impact than the loss of a rifleman or driver, for example. While this process would be complicated for a training clerk using paper and pencil, it should be relatively simple using a computer and could become a part of the automated training and personnel systems now in use or in development in each of the Services. The Army's Standard Army Training System (SATS) and the Navy's TYCOM Readiness Management System, two Windows-based system currently under development and in partial distribution today are examples.

The third concept is to use the same weighing process for subelements of a unit and for the tasks of that subelement that is used for the JTRRS itself. The process of weighting the components of a unit could be conducted as part of each unit's mission analysis process and could be reviewed as part of the JMETL/METL consistency assurance process. Alternatively, a Service might decide to assign weights centrally. Table B-4 shows how each part of a unit could have a different weight depending on the mission.

In some units, for example, the ability of the commander to perform his METL tasks to standard may be more important to the ability of the unit to perform its mission than is the ability of any single subelement of the unit. In other circumstances, one part of a unit might be more important to one mission and less important to another. A unit with both a warfighting and a peacekeeping mission would likely assign different weights to different subunits or individuals depending on the contribution each made to the mission.

The TRP score for a unit performing a specific mission with a specific set of mission-essential tasks would be the sum of the weighted, mission-oriented TRPs of the subelements of the unit. In other words, a unit TRP would be derived from the weighted sum of the mission-oriented TRP scores of (1) the crews of major combat systems, e.g., tanks, gunnery departments, air crews; (2) the unit battle staff, e.g., the commanding officer, the executive officer, and the staff sections; and (3) the support sections and subunits.

Table B-4. Example of the Different Weights that Might be Assigned to Different Parts of a Unit for Different Missions (percent)

Subelements	Mission 1 Weight	Mission 2 Weight	Mission 3 Weight
Commander	40	25	10
Combat Elements	24	40	30
Combat Support Elements	13	20	10
Combat Service Support Elements	23	15	50
Total Weight	100	100	100

Table B-5 shows how the TRP might be calculated for a single unit for a single mission. These calculations would, of course, all be performed by a computer. In this process, each subelement has a TRP score for each task in the mission. These scores are summed to obtain a mission-oriented TRP score for each subelement for the overall mission. These TRP scores are then multiplied by the weight assigned each subelement for the mission. The weighted TRP scores for the subelements are then summed to obtain a mission-oriented TRP score for the unit.

Table B-5. Calculating a Unit TRP for a Single Mission (percent)

Subelements	TRP Score for Task 1	TRP Score for Task 2	TRP Score for Task 3	Total TRP Score for each Subelement	Weight Assigned to each Subelement	Weighted TRP Score for each Subelement
Commander & Battle Staff	33	27	15	75	40	30
Combat Elements	40	15	10	65	24	16
Combat Support Elements	25	30	45	100	13	13
Combat Service Support Elements	35	10	35	80	23	18
TRP score for Unit						77

Once the mission analysis has been performed at each level and the weights for the tasks and the subelements have been determined, the only ongoing job at each level is to keep track of the training status of every subelement. This status would likely be maintained on a real-time basis on a computer at each unit and would be forwarded to the Service data base as appropriate. Each level of command would then be able to query the appropriate data bases and use the data obtained to calculate a real-time mission-oriented training readiness status for the unit or units in question.

To further illustrate how the TRP might meet the needs of the Service, we detail how a TRP score might be built for an Army tank platoon. This example is provided only for illustration. Each Service would be responsible for determining how it would calculate TRPs for the units it provides a CINC.

Once the TRPs are determined for the subelements of the unit, the unit TRP can be determined on a mission-oriented basis. A TRP for a platoon could be built on the TRP scores of the subelements that compose the platoon. The process of calculating a tank platoon TRP would involve the three steps listed below and illustrated in Table B-6.

Step 1: Build a TRP for the subelements of the platoon.

Step 2: Assign a weight to each subelement determined by its importance to the overall success of the platoon in the mission.

Step 3: Multiply each TRP by its assigned weight and calculate a platoon TRP.

Table B-6. Illustrative TRP for a Tank Platoon for a Particular Mission (percent)

Subelement	TRP Score	Weight	Weighted Score
Platoon leader & crew	85	40	34.0
Platoon sergeant & crew	90	30	27.0
Third tank	50	15	7.5
Fourth tank	95	15	14.0
Unit TRP score			82.5

The TRP for a company would be based on the TRP scores calculated for the platoons and the other elements of the company.

Step 1: Build a TRP for the Company Commander, the Company headquarters, and the three platoons

Step 2: Assign a weight or a priority to each element of the company determined by the importance of its training readiness to the overall success of the company in the mission.

Step 3: Multiply each TRP by its assigned weight and calculate a company TRP

TRPs for similar units in other Services could be built in the same manner. At these relatively low levels the tasks and the weights might be fixed by higher headquarters and the unit's only responsibility would be to keep track of training status by task, by squad/crew/team as they do today. The recordkeeping burden on these units should be reduced to the extent that these records are kept in an automated system and the reports to higher headquarters are automatically formatted and forwarded.

From the company or equivalent level, a TRP can then be constructed for the next higher headquarters—the battalion, squadron, or ship. At this higher level it might be appropriate to calculate a TRP score for the battle staff using the same three step process:

Step 1: Build a TRP for the key elements of the battle staff, e.g., the commander, principal staff officers, and staff sections in the battalion.

Step 2: Assign a weight or a priority to each element of the battle staff determined by the importance of its training readiness to the overall success of the battle staff in the mission.

Step 3: Multiply each TRP by its assigned weight and calculate a battle staff TRP.

One advantage of a battle staff TRP is that individual staff members would have a well-defined METL to which they could train. Another advantage is that a battle staff TRP would reflect the level of turbulence in a battle staff. A battle staff that has recently undergone major changes in personnel would have a lower level of training readiness than one whose personnel had been relatively more stable.

The TRP for a ship could be constructed using the same three step process. Alternatively, a TRP could be constructed for an entire ship. Tables B-7 and B-8 show two alternative ways of calculating a TRP score for a Navy ship.

Table B-7. Illustrative TRP for a Ship, Alternative #1 (percent)

Training Required by Task or Training Event	Max TRP Score for Each Task or Training Event	Resources Required to Train Each Task or to Complete Each Training Event
% of required personnel on board by rate, rating and NEC times 50%	50	TBD
% of required personnel with required schools completed times 10%	10	TBD
% of required watch standers qualified by watch section times 10%	10	TBD
% of required personnel trained to standard in basic FXP exercises and certifications times 10%	10	TBD
% of required personnel trained to standard in intermediate FXP exercises and certifications times 10%	10	TBD
% of required personnel trained to standard in advanced FXP exercises and certifications times 10%	10	TBD
Total TRP Score	Sum of TRP Scores	Total Resources

Alternative 1 is simply the sum of the TRPs for various subelements of the crew. It would reflect the impact of turbulence on a ship's training readiness but would not produce a mission-oriented TRP score. Alternative 2 involves the calculation of a personnel factor, TRP scores for each Primary Mission Area, and a weighting scheme. This alternative would produce a mission-oriented score that also reflected the impact of turbulence.

These two Navy examples are designed around existing Navy training and personnel management practices. Ship captains know their personnel status and their training status. With small changes in existing automated systems they should be able to calculate a TRP for their ship using either of the two examples. The TRP could then be incorporated into the ship's SORTS report or the training report that is part of TRMS.

Table B-8. Illustrative TRP for a Ship, Alternative #2 (percent)

Training Required by Task or Training Event	Score in each PMA, Max. score =100%	% of Critical Crew Members Still Assigned to the Ship	Weight Assigned to Personnel & PMA	TRP Score for Individual Training & for Each PMA
% of required personnel on board by rate, rating and NEC	NA	NA	TBD	TBD
Training events req. in each Primary Mission Area, e.g.,				
ASW	TBD	TBD	TBD	TBD
AAW	TBD	TBD	TBD	TBD
Littoral Warfare	TBD	TBD	TBD	TBD
etc.	TBD	TBD	TBD	TBD
Total TRP Score			Sum of Weights = 100	Sum of TRP Scores

The TRP for an aviation squadron could be calculated in much the same way. The TRP-equivalent scores that are currently available could be combined with scores for other subelements of the squadron to produce a mission-oriented TRP score. Table B-9 illustrates how an aviation TRP might be calculated.

Regardless of the methods the Services use to obtain a TRP score for their basic units, once they have a TRP score for these units, they can use these scores and the procedures described in the basic paper to determine and report the mission-oriented training readiness of the forces and enablers they provide to the CINCs.

Table B-9 Illustrative TRP for an Aviation Squadron for a Particular Mission (percent)

Subelement	TRP Score	Weight	Weighted Score
Squadron Commander	89	10	8.9
Flight Leaders (6 each)	75 (avg.)	30	22.5
Other Pilots (20 each)	65 (avg.)	40	26.0
Support Element	55	10	5.5
Command & Control Element	70	10	7.0
Squadron TRP score			69.9

Appendix C

WHO IS LEGALLY RESPONSIBLE FOR TRAINING READINESS

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It is important to understand the law in order to appreciate the CINCs' training readiness responsibilities and authority. According to the provisions of Chapter 6, Title X, of the United States Code, the CINC is responsible for the "preparedness" of the forces assigned to his command and has the authority to give directions to the subordinate component commands and forces "necessary to carry out missions assigned to the command."

These subordinate component commands include all of the operational forces of the Department of Defense. CINC USACOM, for example, has command over the U.S. Army Forces Command, which includes all Army forces in the CONUS (except special operations forces, which are subordinate to CINC Special Operations Command (SOCOM)). CINC USACOM also has command over air forces under the command of the Air Combat Command, naval forces under Second Fleet, and Marine forces under Marine Forces Atlantic. Regional CINCs, such as the CINC US European Command, have command over all forward deployed forces within their area of responsibility.

While the Service Secretaries and their Service Chiefs do not have command responsibilities over the forces, they do have similar but even broader responsibilities for their Services. And, although the Service Secretaries and Chiefs are not under the command of a CINC, they are "subject to the provisions of Chapter 6." These conflicting responsibilities have not yet been fully resolved in law or in practice.

In other words, the component commanders, who are directly subordinate to the CINCs, and the Service Secretaries, who are not subordinate to the CINCs, are both directly responsible for maintaining the training readiness of Service forces needed to meet CINC requirements. Each Service Secretary clearly has the legal responsibility to respond to the requests of the CINCs in those areas related to the CINCs' preparedness to carry out their missions—either through the Secretaries' responsibilities to the component commanders or directly to the CINCs.

The Service Secretaries are also responsible to the Secretary of Defense for carrying out the functions of their department "so as to fulfill the current and future operational requirements of the unified and specified combatant commands." The requirement to fulfill the "future operational requirements" leads the Services, in some cases, to insist upon training for tasks that represent core competencies or future needs even though these tasks may not be of importance to the CINCs, who traditionally are focused on shorter term needs. The conflict between current and future needs is one of the most enduring problems in the Department of Defense.

Appendix D

GLOSSARY

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AC	Active Component
AHP	Analytic Hierarchy Process
ARTEP	Army Training and Evaluation Plan
ATRIMS	Aviation Training and Readiness Information Management System
CINC	Commander-in-Chief
COHORT	Cohesion, Operational Readiness, Training (Army System)
COMAIRLANT	Commander, Air Forces Atlantic
COMSUBLANT	Commander, Submarine Forces Atlantic
COMSURFLANT	Commander, Surface Forces Atlantic
CRP	Combat Readiness Percentage
DoD	Department of Defense
ExEval	Exercise Evaluation (Navy)
GCC	Graduated Combat Capability
IDA	Institute for Defense Analyses
JCS	Joint Chiefs of Staff
JMETL	Joint Mission Essential Task List
JTF	Joint Task Force
JTRRS	Joint Readiness Reporting Reporting System
MAGTF	Marine Air Ground Task Force
MCCRES	Marine Corps Combat Readiness Evaluation System
MCTRSS	Marine Corps Training Readiness Support System
MEF	Marine Expeditionary Force
METL	Mission Essential Task List
MOS	Military Occupational Specialty
NCA	National Command Authority

ORI	Operational Readiness Inspection (Air Force)
OUSD/P&R	Office of the Under Secretary of Defense for Personnel and Readiness
RC	Reserve Component
SATS	Standard Army Training System
SecDef	Secretary of Defense
SOCOM	Special Operations Command
SORTS	Status of Resources and Training System
TRADOC	Training and Doctrine Command (Army)
TRMS	TYCOM Readiness Management System
TRP	Training Readiness Percentage
TYCOM	Type Commander
UJTL	Universal Joint Task List
USACOM	U.S. Atlantic Command

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This paper examines issues associated with training and training readiness in a Joint environment. It has been designed explicitly as a tool for commanders at all levels that will enhance their ability to identify the tasks that are essential to the performance of their Joint missions, to communicate up and down the chain of command to assure common understanding of these tasks in a Joint environment, to keep track of Joint mission-oriented training readiness of Joint forces, and to keep track of the resources associated with the desired levels of Joint training readiness.

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