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# Assigning community criticality weights to Marine Corps readiness reportable equipment

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# THESIS

**ASSIGNING COMMUNITY CRITICALITY WEIGHTS TO MARINE CORPS READINESS REPORTABLE EQUIPMENT**

by

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December 1996

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The Marine Corps' purpose of reporting equipment readiness ratings is to reflect both the portion of equipment possessed by an organization and the ability to perform its wartime mission. Supply ratings generated by the current methodology do an adequate job of reflecting the portion of equipment available for use, but the readiness ratings fall short of representing the unit's true war-fighting ability. The current method used to compute readiness ratings reflects the percentage, or fraction, of readiness reportable items rated that are on-hand and in an operational condition. Under this method, any reportable item that is declared as being in a deadlined maintenance condition will impact the readiness rating with an equal weight, regardless of the critical nature of the item. This thesis proposes a better way of computing the readiness rating in order to ensure it represents the true war-fighting capability of the unit instead of a mere percentage of available equipment. The study involves assigning "community criticality weights" to Marine Corps reportable equip-ment that will reflect the critical nature of an item in terms of the war-fighting mission assigned to the organization that possesses it. When a piece of equipment becomes deadlined, the community criticality weight will be considered when generating readiness ratings. A broken item will, therefore, influence the readiness rating by a magnitude that is commensurate with the item's community criticality weight. The readiness rating will now bear a closer approximation to the war-fighting ability of the unit than the rating generated under the current method and it will ensure that the priority of the maintenance effort is focused on those items that will provide the maximum benefit to mission accomplishment.

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# ASSIGNING COMMUNITY CRITICALITY WEIGHTS TO MARINE CORPS READINESS REPORTABLE EQUIPMENT

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## ABSTRACT

The Marine Corps' purpose of reporting equipment readiness ratings is to reflect both the portion of equipment possessed by an organization and the ability to perform its wartime mission. Supply ratings generated by the current methodology do an adequate job of reflecting the portion of equipment available for use, but the readiness ratings fall short of representing the unit's true war-fighting ability. The current method used to compute readiness ratings reflects the percentage, or fraction, of readiness reportable items rated that are on-hand and in an operational condition. Under this method, any reportable item that is declared as being in a deadlined maintenance condition will impact the readiness rating with an equal weight, regardless of the critical nature of the item. This thesis proposes a better way of computing the readiness rating in order to ensure it represents the true war-fighting capability of the unit instead of a mere percentage of available equipment. The study involves assigning "community criticality weights" to Marine Corps reportable equipment that will reflect the critical nature of an item in terms of the war-fighting mission assigned to the organization that possesses it. When a piece of equipment becomes deadlined, the community criticality weight will be considered when generating readiness ratings. A broken item will, therefore, influence the readiness rating by a magnitude that is commensurate with the item's community criticality weight. The readiness rating will now bear a closer approximation to the war-fighting ability of the unit than the rating generated under the current method and it will ensure that the priority of the maintenance effort is focused on those items that will provide the maximum benefit to mission accomplishment.

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# I. INTRODUCTION

## A. BACKGROUND

Today's international geopolitical scene, along with changes in U.S. defense orientation since the end of the Cold War, have required the United States Marine Corps (USMC) to be prepared to respond to new and challenging missions. In addition to traditional missions such as protecting U.S. national interests abroad and force projection, America's "Force-in-Readiness" must be prepared to execute "military operations other than war" (MOOTW) type taskings which include humanitarian relief, civilian evacuation, drug interdiction, and support to civil authorities [Ref. 1:p. 56]. Because of this current requirement, the operational tempo experienced by USMC combat units is higher today than it has been in decades. In fiscal year 95 alone, the Marine Corps participated in 15 real-world operations and 297 exercises [Ref. 1:pp. 54-55]. In order to ensure that Marine Corps units are prepared to respond to these missions, it is imperative that a high level of readiness be maintained by each Fleet Marine Force (FMF) organization and that it be accurately reported up the chain of command.

All FMF organizations continuously report readiness ratings up the chain of command all the way to the Joint Chiefs of Staff (JCS) level in order to provide a realistic portrayal of their capability to perform their assigned wartime mission [Ref. 2:p. 1-3]. The Marine Corps defines readiness as "the ability of forces, units, weapon systems, or equipment to deliver the output for which they were designed" [Ref. 2:p. B-1]. There are three parts to readiness: manpower, money, and materiel. Materiel, or equipment, readiness will be the focus of this study and is defined by the Marine Corps as "the portion of the unit's equipment or ability to perform its mission as determined by the condition of the equipment resources allocated to the unit" [Ref.

3:p. 1-6]. This definition has two parts. The first part addresses the portion of equipment that is available to the unit, and the second deals with the unit's ability to perform its mission as determined by the equipment condition. It is important that the Marine Corps' methodology of computing and reporting equipment readiness remains faithful to both parts of this definition.

## B. OBJECTIVE OF THE RESEARCH

The current method used by the Marine Corps to compute equipment readiness does a good job for showing the portion of a unit's equipment that is available, but does not reflect the ability of the unit to perform its wartime mission. Equipment readiness reported by a Marine Corps unit is reflected by a percentage figure. It measures the fraction of mission essential equipment that is both on-hand, and in a mission capable maintenance status. Should an item break, regardless of the criticality of the item to that specific unit, it will negatively impact the equipment readiness figure with the same weight.

The impact that a broken piece of equipment has on the ability of a unit to perform its wartime mission, depends on the relationship between the broken item and the purpose of the unit. For example, a broken encryption device will have a larger negative impact on the ability of a communications battalion to function than it would have on an infantry battalion. On the other hand, a broken .50 cal machine gun will have a heavier impact on the ability of an infantry unit to function than it would on a communications battalion. A tank battalion's ability to perform its wartime mission will be degraded significantly more by the loss of an M1A1 main battle tank than it would by a broken MEP-003 generator. However, under the current method of computing equipment readiness ratings, the negative impact would be the same for both items.

The objective of this research is to investigate the development of a better method of computing ground equipment readiness that will reflect not only the portion of equipment available to a unit, but also the ability of the unit to perform its mission as determined by the maintenance condition of its equipment. The research will attempt to associate a specific community criticality weight to a piece of equipment that is relative to the criticality of the item in terms of that community's mission or purpose. The weight will be considered when the equipment readiness rating is computed in order to reflect the impact of that broken item on the unit's ability to function.

## C. RESEARCH QUESTIONS

Based on the aforementioned objective, in this thesis we will address one primary question and three secondary questions:

### 1. Primary Question

Can the current method used to compute equipment readiness for USMC organizations be modified in order to produce a figure that reflects "ability", not just "portion"?

### 2. Secondary Questions

a. What is the distribution of readiness reportable items throughout the FMF?

b. How does the criticality of a piece of equipment vary among the different FMF communities?

c. How can the equipment criticality variability between communities be reflected in the computation of an organization's equipment readiness?

## D. SCOPE AND LIMITATIONS

The main thrusts of this study are to: (1) construct a matrix that shows the criticality distribution of a piece of equipment among the different FMF communities,

and (2) modify the method used to compute equipment readiness ratings in order to consider the criticality of a broken item. This will require obtaining prioritized lists of the rankings of readiness reportable equipment as determined by the different communities. We will examine active USMC ground communities only, as the focus of this thesis is on ground equipment readiness. Aviation readiness for the Marine Corps is generated and reported via U.S. Navy's Aircraft Material Readiness Report (AMRR) and will not be address in this study [Ref. 4]. Data collection will be concentrated from the I Marine Expeditionary Force located at Camp Pendleton, California. New methods of computing equipment readiness and changes to readiness report formats to accommodate the new method will be proposed based on the information contained within the matrix.

## E. ORGANIZATION OF THE THESIS

Chapter I provides a general background of why readiness is so important to the Marine Corps. It also examines the inadequacy of the current method of computing equipment readiness ratings in reflecting the ability of an organization to perform its assigned mission. Chapter II will closely examine how equipment readiness ratings are currently computed and reported up the chain of command and also present a scenario that will amplify the problems with this method. Chapter III will discuss proposed improvements for computing ground equipment readiness. Chapter IV will outline the methodology to be used to institute the proposed improvements and will present a completed matrix that depicts the relationship between the criticality of every readiness reportable item to the different USMC ground communities that rate the item. Modifications to the current method of computing equipment readiness ratings will be proposed along with accompanying changes to the equipment readiness report format. Chapter V will show how this new method of computing ground equipment readiness differs from the current

methodology by examining the same scenario presented in Chapter II, applying the proposed methodology to compute readiness figures, and comparing the results. Four new scenarios, each comparing deadlined equipment from two similar units belonging to the same community, will be looked at and a survey will be conducted asking USMC officers to indicate which unit is considered more capable of performing its wartime mission. Readiness ratings will be generated using both the current and proposed methodologies and compared with the survey results. Chapter VI will provide a summary, conclusions, offer recommendations, and discuss opportunities for further study.

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# II. CURRENT SYSTEM AND PROBLEM SCENARIO

This chapter examines the current methodology employed by the Marine Corps to compute equipment readiness. It identifies and explains the automated report that is used by Fleet Marine Force organizations to report ground equipment readiness to higher headquarters. The chapter concludes with a problem scenario presented to highlight problems with the current methodology used to compute ground equipment readiness.

## A. DEFINITIONS

In this section we provide definitions of terminologies needed to understand the current methodology of computing and reporting ground equipment readiness.

### 1. Allowance Items

Refers to the quantity of items of supply or equipment prescribed by Marine Corps Tables of Equipment or other authorized allowance publications. [Ref. 5:p. A-1]

### 2. Commodity Area

Refers to a grouping or range of items which contain similar characteristics, have similar applications, and are susceptible to similar logistics management methods. Examples include motor transport, communications, ordnance, etc. [Ref. 3:p. 1-7]

### 3. Deadlined Equipment

Equipment is considered deadlined when it is not mission capable; that is, it cannot perform its designed combat mission due to the need for critical repairs. [Ref. 3:p. 1-7]

### 4. Item Designator Number (ID Number)

A number assigned to identify an equipment end item down to the specific model or variant.

### 5. Marine Corps Integrated Maintenance Management System (MIMMS)

The mechanized automated information system used by the Marine Corps to provide for maintenance production management. [Ref. 5:p. A-15]

### 6. Not Mission Capable

A term describing the equipment condition/status which indicates that it cannot perform its designed primary function, synonymous with "deadlined." When equipment is not mission capable, it will be reported in one of two ways. Not Mission Capable Maintenance (NMCM), indicates that an item is not mission capable because of a lack of personnel, space, or tools. Not Mission Capable Supply (NMCS), indicates the item is awaiting repair parts. [Ref. 3:p. 1-6]

### 7. Status of Resources and Training System (SORTS)

An internal management system used by the Department of Defense that indicates, at a selected time, the status of a unit's personnel resources, amount and condition of equipment, and the level of unit training relative to service standards. [Ref. 2:p. 1-3]

## B. MARINE CORPS AUTOMATED READINESS EVALUATION SYSTEM (MARES)

The ground equipment readiness of FMF organizations is monitored via the Marine Corps Automated Readiness Evaluation System (MARES). This information system is a subset of the Marine Corps Integrated Maintenance Management System (MIMMS), which integrates supply and maintenance data to provide information concerning the ground equipment of active FMF units. The MARES receives, processes, and stores data which reflects the maintenance status of selected ground

equipment as well as identifies excesses and deficiencies of reportable equipment. The MARES data is also used as input for the Status of Resources and Training System (SORTS) reporting. [Ref. 2:p. 1-3]

Not all USMC equipment is monitored by MARES. The Marine Corps publishes an annual list of those mission-essential war-fighting pieces of equipment that have a direct impact on readiness and are to be reported, via MARES, to Headquarters Marine Corps (HQMC). This list can be found in the Marine Corps bulletin (MCBul) 3000 series entitled "Table of MARES Logistics Reportable Items for the SORTS". Items included in the Bulletin fall into one of the following categories:

**1. Reportable Equipment**

An item of equipment contained in the MCBul 3000 series. Before items can be included in this Bulletin, they must be mission-essential principal end items that are 85 percent fielded Marine Corps-wide, nominated for MARES reporting by either the field commands or HQMC, and accepted for inclusion by the Commandant of the Marine Corps (CMC). [Ref. 3:p. 1-5]

**2. Pacing Items**

Combat essential primary weapon system(s) assigned to the unit to accomplish its wartime mission. Pacing items are of such importance that they are subject to continuous monitoring and management at all levels of command [Ref. 3:p. 1-6]. These items can be considered as "Super" reportable equipment. Pacing item designation varies among the different war-fighting communities depending on specific missions.

MARES monitors and reports maintenance readiness figures as well as excesses and deficiencies for reportable equipment, to include pacing items. The system also separately reports the same figures for the pacing items only.

## C. TABLE OF AUTHORIZED MATERIEL CONTROL NUMBER (TAMCN)

All major end items of equipment are assigned and identified by a Table of Authorized Materiel Control Number (TAMCN) within the Marine Corps. The TAMCN is more broad than the ID Number as one TAMCN may encompass several ID Numbers. In its basic form, a TAMCN is a five-digit alphanumeric number that identifies the commodity area to which the item is associated and indicates whether the item is considered a Type 1, Type 2 or Type 3 piece of equipment. All Marine Corps equipment can be classified as one of the three types. The following is an explanation of these three types of equipment:

> Type 1 Equipment: War-fighting items that are directly utilized to accomplish the mission. All units must have on hand or on valid requisition all type 1 allowances. [Ref. 6:p. 11-4]
>
> Type 2 Equipment: Items used for garrison and encampment use only. A unit may possess up to the allowance quantity for type 2 items. [Ref. 6:p. 11-4]
>
> Type 3 Equipment: Items used in a desert or arctic environment. These items are all maintained in centrally held contingency equipment training pools and are issued as needed. [Ref. 6:p. 11-4]

All TAMCNs begin with an alpha character and are followed by four digits. The alpha character identifies both the commodity and type. The next four digits are numerical and merely reflect the order in which items were originally catalogued. The following table displays the appropriate TAMCNs assignable by commodity and type:

**Table 2.1. TAM Control Number Assignment [Ref. 6:p. 11-5]**

| Commodity | Type 1 | Type 2 | Type 3 |
|---|---|---|---|
| Communication/ Electronics | A0000-A9999 | H0000-H9999 | T0000-T9999 |
| Engineer | B0000-B9999 | J0000-J9999 | U0000-U9999 |
| General Supply | C0000-C9999 | K0000-K9999 | V0000-V9999 |
| Motor Transport | D0000-D0000 | M0000-M9999 | W0000-W9999 |
| Ordnance | E0000-E9999 | N0000-N9999 | X0000-X9999 |

All readiness reportable items are Type 1 major end items and are identified in the MCBul 3000 series by their respective TAMCN.

## D. LM2 UNIT REPORT

MARES receives readiness figures for FMF units based on what is generated by the LM2 report. Each FMF unit that has an allowance for readiness reportable equipment will automatically have an LM2 report generated for them by MIMMS. The LM2 report is a listing that reflects each readiness reportable TAMCN rated by the unit, the quantity authorized, the quantity possessed, and any excesses, if applicable. A negative statement is provided when no equipment is reported deadlined for that TAMCN. On all deadlined items, the serial number and other pertinent maintenance information is printed [Ref. 5:pp. 17-35]. Totals of authorized, possessed, excess, and deadlined items are printed at the end of the report. The S (Supply) and R (Readiness) ratings are generated for all reportable equipment and then again for only pacing items. If the pacing item percentages for S and R ratings are lower than those generated for all reportable equipment, the organization will report that lower percentage rating. [Ref. 7:para 6.E] Figure 2.1 shows a notional LM2. The following information describes the contents of this report:

MARES LM2 UNIT REPORT
HQ 19TH MAR

DATE 96/126
UIC PAGE 1 MC PAGE 56

UIC M12301 MAJOR CMD M12000

| TAM NUMBER | TAM NOMENCLATURE | REPT AUTH | REPT POSS | DEADLINED-EQUIP SERIAL-NO | DEADLINED-EQUIP ID-NO | ORIGINAL DATE-DL | DATE-OF PRES-COND | PRES COND | PRES EOM | PRESENT HOLDER | STATUS DAYS | ERO NO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A1440 | RADAR SET, AN/TPQ-36 | 4 | 4 | 119A | 8211B | 96/082 | 96/082 | NMCS | 3 | M12301 | 044 | LAF68 |
| | | | | REMARKS ABOUT TAM | | | | | | | | |
| | | | | | | | | T/E=005<br>DPYD QTY 001 TO M20181 | | | | |
| A1957 | RADIO SET, AN/MRC-145 | 7 | 7 | NONE REPORTED ON DEADLINE<br>REMARKS ABOUT TAM | | | | | | | | |
| | | | | | | | | T/E=005<br>PLANNED ALLOWANCE OF QTY 009<br>FY98, QTY 007 RCVD ON HAND | | | | |
| A2069 | RADIO SET, UHF ANPRC-113(V)3 | 2 | 2 | NONE REPORTED ON DEADLINE<br>REMARKS ABOUT TAM | | | | | | | | |
| | | | | | | | | T/E=002 | | | | |
| A8082 | TSEC/KG-84A | 45 | 45 | NONE REPORTED ON DEADLINE<br>REMARKS ABOUT TAM | | | | | | | | |
| | | | | | | | | T/E=045 | | | | |
| B0891 | GENERATOR SET 10KWMEP002 | 12 | 11 | RZ80161 | 5684C | 96/122 | 96/124 | NMCM | 2 | M12301 | 002 | ATH71 |
| | | | | REMARKS ABOUT TAM | | | | | | | | |
| | | | | | | | | T/E=012<br>T/E DEF QTY 002/12301-5334-GS04<br>BB (6110) | | | | |

**Figure 2.1. Notional LM2 Report**

Figure 2.1 (Continued)

| TAM NUMBER | TAM NOMENCLATURE | UIC M12301 REPT AUTH | UIC M12301 REPT POSS | DEADLINED-EQUIP SERIAL-NO | DEADLINED-EQUIP ID-NO | ORIGINAL DATE-DL | DATE-OF PRES-COND | PRES COND | MAJOR CMD M12000 PRES EOM | MAJOR CMD M12000 PRESENT HOLDER | MAJOR CMD M12000 STATUS DAYS | MAJOR CMD M12000 ERO NO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B2462 | TRACTOR, MED, FULL TRACK, D7G | 6 | 6 | NONE REPORTED ON DEADLINE | | | | | | | | |
| | | | | REMARKS ABOUT TAM | | | | | | | | |
| | | | | | | | | T/E=006 | | | | |
| *D1059 | 5-10N TRK M813 | 50 | 49 | 5475371 | 8087B | 96/115 | 96/126 | NMCM | 2 | M12301 | 000 | AUL54 |
| | | | | 558264 | 8262A | 96/221 | 96/221 | NMCM | 4 | M14330 | 005 | LN673 |
| | | | | 558354 | 8262A | 96/108 | 96/124 | NMCS | 2 | M12301 | 002 | AUN61 |
| | | | | REMARKS ABOUT TAM | | | | | | | | |
| | | | | | | | | T/E=054<br>QTY 001 SHIPPED TO MCLB R&R<br>DPYD QTY 004 TO M20181 | | | | |
| D1158 | TRK CARGO, HMMWV M998/1038 | 32 | 33 | 529042 | 8770A | 96/125 | 96/125 | NMCS | 2 | M12301 | 001 | AUG61 |
| | | | | 535035 | 8770A | 96/125 | 96/125 | NMCM | 2 | M12301 | 001 | AUG65 |
| | | | | 535263 | 8770A | 96/120 | 96/126 | NMCS | 2 | M12301 | 000 | AUG64 |
| | | | | REMARKS ABOUT TAM | | | | | | | | |
| | | | | | | | | T/E=032<br>PLANNED ALLOW OF 010 FY97<br>QTY 001 RCVD AND ON HAND | | | | |
| D1212 | WRECKER M816/M936 | 2 | 2 | 550910 | 8780A | 96/041 | 96/059 | NMCS | 2 | M12301 | 067 | AUP40 |
| | | | | REMARKS ABOUT TAM | | | | | | | | |
| | | | | | | | | T/E=002 | | | | |
| *E0980 | MACH GUN CAL 50 M2 | 10 | 10 | NONE REPORTED ON DEADLINE | | | | | | | | |
| | | | | REMARKS ABOUT TAM | | | | | | | | |
| | | | | | | | | T/E=010 | | | | |
| E1158 | NIGHT VISION SIGHT INDIV SERVD | 6 | 6 | NONE REPORTED ON DEADLINE | | | | | | | | |
| | | | | REMARKS ABOUT TAM | | | | | | | | |
| | | | | | | | | T/E=006 | | | | |

UIC M12301 MAJOR CMD M12000

| TAM NUMBER | TAM NOMENCLATURE | REPT AUTH | REPT POSS | | DEADLINED-EQUIP SERIAL-NO | ID-NO | ORIGINAL DATE-DL | DATE-OF PRES-COND | PRES COND | PRES EOM | PRESENT HOLDER | STATUS DAYS | ERO NO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E1210 | PADS AN USQ-70 | 3 | 5 | 2 | 0202 | 8837A | 96/122 | 96/122 | NMCM | 2 | M12301 | 004 | WW285 |
| | | | | | 0209 | 8837A | 96/216 | 96/218 | NMCS | 3 | M22910 | 273 | LAE95 |
| | | | | | REMARKS ABOUT TAM | | | | | | | | |
| | | | | | | | | | T/E=003 | | | | |
| | | | | | | | | | T/E EXCESS QTY 002 PENDING MOA | | | | |
| | TOTALS FOR THIS UIC ARE | 179 | 180 | 3 | QTY DL = 11 | | | | | | | | |

PACING ITEM READINESS

S RATING EQUALS 98.33 PERCENT
R RATING EQUALS 93.33 PERCENT

END ITEM READINESS

S RATING EQUALS 98.87 PERCENT
R RATING EQUALS 93.89 PERCENT

'- PACING ITEM
''- LOCALLY REORTABLE ITEM

$$\text{S RATING} = \frac{\text{POSS-EXCESS}}{\text{AUTH}}$$

$$\text{R RATING} = \frac{\text{POSS-DL}}{\text{POSS}}$$

Figure 2.1 (Continued)

### 1. Header Information

The header identifies the effective date of the report by displaying the calender year/Julian date. The unit this report pertains to is identified as the headquarters element of the 19th Marine Regiment, Unit Identification Code (UIC) M12301. They are part of the major command identified by UIC M12000.

### 2. Legend

Data is portrayed in the body of the report as follows: [Ref. 5:pp. 17-35, 17-36]

- **TAM.** This column displays the appropriate TAMCN. Notice the report is presented in TAMCN sequence.

- **TAM NOMENCLATURE.** This column displays the name of the equipment.

- **REPT AUTH.** The quantity authorized by the unit for each TAMCN is displayed. This quantity will be determined by appropriate tables of equipment and/or special allowances.

- **REPT POSS.** The on hand quantity as reported by the units supply section is displayed. Ideally, the possessed quantity should equal the authorized quantity.

- **EXCESS QTY.** This column displays the amount of equipment for each TAMCN which the unit has on hand over the amount authorized.

*Note: If there are no items reported deadlined for a TAMCN, the statement "None Reported on Deadline" will appear and the following fields will be blank.

- **DEADLINED EQUIP.** The serial number and ID Number of unit equipment for each TAMCN that is reported in a deadlined status is displayed.

- **ORIGINAL DATE-DL.** The date the item was placed in a Not Mission Capable Status is displayed.

- **DATE-OF-PRES-COND**. This column displays the date of the most frequent change in readiness condition of the deadlined item.

- **PRES COND.** This column indicates whether the deadlined item is currently in a "NMCS" or "NMCM" readiness posture.

- **PRES EOM.** The echelon of maintenance that is performing maintenance on the deadlined item is displayed.

- **PRES HOLDER.** The UIC of the organization performing maintenance on the deadlined item is displayed. If the item is at the organizational level, the owning unit UIC will be displayed. If the item is at the intermediate level, the intermediate shop UIC will be displayed.

- **STATUS DAYS.** The number of days the deadlined has been in its current readiness posture is displayed.

- **ERO NO.** This column displays the Equipment Repair Order Number under which the item was inducted into the maintenance cycle. If the item is at the intermediate level, the intermediate ERO number will be displayed.

### 3. RM4 Remarks

Since the LM2 is a high visibility report, reviewed by the chain of command and HQMC, the owning unit is permitted to make clarifying comments about any TAMCN. Such comments are referred to as RM4 remarks. Anytime there is a discrepancy between the authorized and possessed quantities for a particular TAMCN, disposition efforts of the excess items, or requisition status of the deficiency must be explained in an RM4 remark. Other examples that warrant clarification in an RM4 remark include articulating the location of deployed reportable equipment or providing details on the possessed quantities of different models/variants of a particular TAMCN.

### 4. Ratings

At the conclusion of the report, supply and readiness ratings are computed for pacing items and then for all reportable end items. Formulas for "S" and "R" ratings are found at the bottom of the report. The "S" rating reflects the fraction of the total authorized items that are being reported as on hand. The "R" rating reflects the fraction of possessed items that are in working condition. The lowest ratings generated from either end items or pacing items data are forwarded as input for the equipment readiness portion of MARES.

## E. PROBLEM SCENARIO

The following scenarios are designed to highlight problems with the current methodology of computing ground equipment readiness:

### 1. 3rd Battalion, 10th Marines (3/10)

3/10 is an artillery battalion located at Camp Lejeune, North Carolina. The battalion is authorized 210 pieces of readiness reportable equipment, 77 of which are pacing items. They are reporting two pieces of equipment deficient, a D1059 5-ton truck, which is a pacing item for this unit, and an A2065 HF radio, for a total possessed quantity of 208. They have no excess items on hand. In addition to the two deficiencies, 3/10 is reporting 21 readiness reportable items in a deadline status consisting of the following:

| TAMCN | Nomenclature | DL Qty |
|---|---|---|
| A2065 | Radio Set, AN/PRC-104 | 1 |
| A2069 | Radio Set, AN/PRC-113 | 1 |
| A2167 | Radio Set, AN/VRC-88A | 4 |
| A8082 | GP, Tele Equip, TSEC/KG-84A | 6 |

| | | | |
|---|---|---|---|
| B0953 | Generator, MEP-005A | 3 | |
| B1021 | Generator, MEP-006 | 2 | |
| D1059 | 5-Ton Truck, M813 | 3 | (Pacing Item) |
| E1158 | Night Vision Goggles | 1 | |

Per the rating formulas identified at the bottom of Figure 2.1, 3/10 would be reporting the following supply and readiness ratings:

| **Pacing Items** | **End Items** |
|---|---|
| S Rating Equals 98.70 | S Rating Equals 99.05 |
| R Rating Equals 96.05 | R Rating Equals 89.90 |

**2. 2nd Battalion, 10th Marines (2/10)**

2/10 is a sister artillery battalion to 3/10 and is also located at Camp Lejeune. 2/10 has an identical table of equipment as 3/10 and is also authorized 210 pieces of readiness reportable equipment, 77 of which are pacing items. The battalion is deficient only one item, an E0665 M198 howitzer, which is a pacing item. The battalion is excess one D1059 5-ton truck, also a pacing item, and one B0953 MEP-005 generator. 2/10 is reporting 17 pieces of readiness reportable equipment in a deadline status consisting of the following:

| **TAMCN** | **Nomenclature** | **DL Qty** |
|---|---|---|
| A1935 | Radio Set, AN/MRC-138B | 1 |
| A2065 | Radio Set, AN/PRC-104 | 2 |

| | | |
|---|---|---|
| A2070 | Radio Set, AN/PRC-119A | 3 |
| A2508 | Switchboard 3862 | 1 |
| B0891 | Generator Set, MEP-003 | 3 |
| D1158 | Truck, HMMWV, M998 | 3 |
| E3250 | Radar Chronograph, M-90 | 1 |
| E1210 | AN/USQ-70 | 1 |
| E0665 | Howitzer, M198 | 2 (Pacing Item) |

Per the rating formulas identified at the bottom of Figure 2.1, 2/10 would be reporting the following supply and readiness ratings:

| **Pacing Items** | **End Items** |
|---|---|
| S Rating Equals 98.70 | S Rating Equals 99.52 |
| R Rating Equals 97.40 | R Rating Equals 91.94 |

### 3. Equipment Readiness Comparison

By observing only the supply and readiness ratings for each battalion, one would conclude that 2/10 is more capable and should be the unit of choice for deployment in a contingency situation in terms of equipment readiness. But is 2/10's ability to perform its wartime mission greater than that of 3/10? The Marine Corps has defined the mission of an artillery battalion as being able to "provide direct support, general support, reinforcing, general support reinforcing fires to support a Marine Air Ground Task Force (MAGTF) conducting combat operations." [Ref. 8:para 3] In light of this mission statement, the most critical piece of equipment an

artillery unit owns is the M198 howitzer [Ref. 9]. An artillery battalion rates 18 howitzers and 2/10 only has 15 operational while 3/10 has all 18. Howitzers and their ammunition are moved around the battlefield by the 5-ton truck. An artillery battalion rates 59 5-ton trucks. 2/10 has 60 available for use and 3/10 has 56 [Ref. 10]. Although not pacing items, the AN/USQ-70 and the M-90 chronograph both have a significant impact on the ability to execute the war-fighting mission of an artillery unit, as defined above, which exceeds that of most other readiness reportable items [Ref. 9]. 2/10 is reporting one of each in a deadline status while 3/10 has all available.

When determining an organization's "ability" to perform its wartime function, the criticality of the deadlined equipment as it relates to the units mission needs to be considered. Although in the above scenario, 3/10 has lower supply and readiness ratings than its sister battalion, it is arguably more combat ready since more of its critical war-fighting assets are available. In terms of equipment readiness, 3/10 should be the unit of choice for deployment in a contingency situation. Consideration of the critical nature of the equipment as it relates to a unit's mission needs to be reflected in the supply and readiness ratings so that these ratings capture the true "ability" of a unit to carry out its assigned mission. The current method of computing "R" ratings falls short of doing this. Furthermore, the current method fails to incentivize accomplishing repairs on critical assets over those that are less vital. 2/10 could improve their already inflated readiness rating by repairing their two A2065 AN/PRC-104 radios and the A2508 switchboard, both readiness reportable items but not considered as vital to mission accomplishment as other reportable items [Ref. 9]. This would increase their end item readiness to 93.36, although considering the very critical nature of the other deadlined items, 2/10's ability to perform their war-fighting mission will have insignificantly improved by the repair of the these three

communication items. Because the current method allows each reportable item to impact the readiness rating with equal weight, it not only fails to represent war-fighting ability, but fails to motivate the allocation of maintenance resources towards the repair of the most critical assets as well.

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# III. PROPOSED READINESS RATING IMPROVEMENTS

The Marine Corps states that the purpose of readiness reporting is to "provide a realistic portrayal of a unit's capability to perform its assigned wartime mission" [Ref. 2:p. 1-3]. When a piece of equipment is placed in a non-mission capable status, the magnitude of the negative impact that the loss of that item has on the organization's capability to function, needs to be captured in the equipment readiness rating associated to that unit. As discussed in the previous chapter, the current methodology falls short of doing this. With some modification to this methodology, the Marine Corps can gain the "realistic portrayal of a unit's capability to perform its assigned wartime mission" in terms of ground equipment readiness, that it seeks.

## A. COMMUNITY VERSUS READINESS REPORTABLE EQUIPMENT MATRIX

The impact that a piece of readiness reportable equipment has on a unit's ability to perform its wartime mission will vary depending on the nature of the mission. This variability can be captured in the computation of readiness ratings by applying a community criticality weight to every piece of readiness reportable equipment. This weight will be determined from a matrix depicting how a readiness reportable item relates to each Marine Corps community in terms of criticality. Should an item be placed in a non-mission capable status, the community criticality weight will be considered when computing readiness ratings.

### 1. Community Designation

Each Marine Expeditionary Force contains three ground major subordinate commands: the Marine Division; the Force Service Support Group (FSSG); and the Surveillance, Reconnaissance, and Intelligence Group (SRIG) [Ref. 11:p. 16]. Each major subordinate command is comprised of different communities. A community

consists of units that have been assigned similar wartime missions and have similar priorities as well as equipment. The initial task in developing community criticality weights is to separate the MEF into distinct communities.

### 2. Equipment Association

Each readiness reportable piece of equipment needs to be associated to each community that rates the item. A community may very well be comprised of multiple units. The tables of equipment (T/Es) of each unit that make up a community will have to be consulted so that every readiness reportable item belonging to that community can be flagged. A matrix will be constructed reflecting the different Marine Corps communities across the horizontal axis and the TAMCN of all readiness reportable equipment down the vertical axis. At this point, the body of the matrix will show which TAMCNs are associated with which communities.

### 3. Ranking of Readiness Reportable Equipment

Each community will be solicited by the author to provide a ranking of its associated readiness reportable equipment in terms of the criticality of each item to the assigned wartime mission of the community. From the matrix, associated readiness reportable equipment will be extracted, in TAMCN sequence, for each community. Community advocates will be identified and the lists forwarded to them for prioritization. Upon receipt of the rankings from the communities, the matrix will be updated so the body not only shows which TAMCNs are associated to which communities, but will indicate where each TAMCN falls in terms of criticality ranking for each community.

## B. COMMUNITY CRITICALITY WEIGHTS USING ABC CLASSIFICATION

Community rankings of readiness reportable equipment will be assigned a criticality weight that is determined by applying ABC classification. This classification method involves grouping items together in decreasing order as determined by some criteria. The criteria used in this study will be the criticality ranking. This array

is then split into several classes. For the purpose of defining ABC classification we'll assume three classes, called A, B, and C. The A class will comprise the top 10% to 20% of the most critical items, as ranked by each community; the B group will comprise the next 20% to 30% of the most critical items; and the C class will encompass the bottom 50% to 60% of the rankings [Ref. 12:p. 1]. When an item is placed in a non-mission capable status, the magnitude of the negative impact on the organization's reported equipment readiness will be determined by the class to which the piece of equipment is associated for that community. An item belonging in the A class will have a greater impact on equipment readiness than an item associated with the C group. It is possible that an item could belong in the A group for one community and be in the C class for a different community.

All items of a common class will be assigned the same community criticality weight. The weight will represent the multiplier applied to the computation of equipment readiness should an item become deadlined. In the case of our example above, all A class items might be given a weight of 3, all B class items a weight of 2, and items in the C group a weight of 1. These community criticality weights will then be placed into the body of the matrix in place of the community rankings. The matrix will now demonstrate how a piece of equipment relates to a community in terms of criticality. It will also display the variability in the criticality of an item across the different USMC ground communities.

## C. LM2 RATING FORMULA MODIFICATIONS

The LM2 report is the vehicle used to compute and report ground equipment readiness. The Marine Corps' definition of equipment readiness encompasses the portion of equipment that is available to the unit and the unit's ability to perform its mission as determined by the equipment condition. Minor changes to the current

readiness formula are required to accommodate the use of community criticality weights when computing readiness ratings that comply with this definition.

### 1. Supply Ratings

The "S" rating that is currently computed by the LM2 is generated by the following formula:

"S" rating = [(POSS QTY - EXCESS QTY) / AUTH QTY]

This formula does an adequate job of satisfying the first part of the equipment readiness definition. The rating generated by the respective formula accurately reflects the portion of readiness reportable equipment that the unit is reporting "on hand." No changes are needed for this rating.

### 2. Readiness Ratings

The method of computing the "R" rating needs to be modified in order to consider the community criticality weight of a particular deadlined item and to capture the true war-fighting ability of a particular unit as determined by the equipment condition. The current "R" rating formula merely computes the fraction of possessed equipment that is in an operational maintenance condition and is depicted as follows:

"R" rating = [(POSS QTY - DL QTY) / POSS QTY]

Capturing the importance of a deadlined item in the computation of readiness ratings can be accomplished by utilizing a weighted average technique. This technique involves assigning a weighting factor to a parameter prior to evaluation. The degree of importance of a parameter will determine the magnitude of the weighting factor. The parameters that apply to the readiness formula will be deadlined items. The most important items will receive the heaviest weight [Ref. 13:p. 157]. The criticality weights generated from community rankings of reportable equipment

will be used as the weighting factors when applying this technique. The following modifications to the current formula will occur:

- Instead of using the possessed quantity (POSS QTY), use a possessed weight (POSS WT) which equals the sum of the product of the possessed quantity multiplied by the community criticality weight for each TAMCN.

- Instead of using the deadlined quantity (DL QTY), use a deadlined weight (DL WT) which equals the sum of the products of each deadlined item multiplied by its respective community criticality weight.

The modified formula would be depicted as follows:

"R" rating = [(POSS WT - DL WT) / POSS WT]

The LM2 report format will have to be modified as well in order to accommodate the new readiness rating formula.

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# IV. METHODOLOGY AND MATRIX

This chapter discusses the methods used by the author to accomplish the proposed improvements. The matrix mentioned in Chapter III that depicts community criticality weights for all readiness reportable equipment and all ground communities will be presented. Modifications to the LM2 report that will permit consideration of the community criticality weight in the computation of equipment readiness ratings will be proposed.

## A. COMMUNITY DESIGNATION

The negative effect that a piece of deadlined equipment has on an organization's capability to perform its wartime mission will be commensurate for those organizations having similar missions and weapons systems. The first task is to identify and associate the various ground FMF organizations into distinct communities consisting of units with similar missions and equipment.

### 1. Review of Marine Corps Tables of Equipment

The Table of Equipment System is a software package maintained by the Marine Corps Combat Development Command (MCCDC) located in Quantico, Virginia. This program utilizes organization and equipment data that is maintained by the logistics plans and policy office of HQMC and is designed to provide fast and easy access to USMC table of equipment data [Ref. 14]. "Print all T/Es" is an option available from the main menu. The output from this option provides a listing of every Marine Corps T/E number along with the descriptive name. Armed with this listing, all FMF ground T/Es can now be reviewed and consolidated into communities having similar missions and priorities.

### 2. Ground Communities

Table 4.1 contains the 20 communities that were identified and the parent major subordinate command.

**Table 4.1. USMC FMF Ground Communities**

| | |
|---|---|
| Marine Division | Division Headquarters<br>Infantry<br>Artillery<br>Tank<br>Light Armored Reconnaissance<br>Assault Amphibian<br>Combat Engineer |
| Force Service Support Group | FSSG Headquarters<br>Maintenance<br>Landing Support<br>Engineer Support<br>Supply<br>Motor Transport<br>Medical |
| Surveillance, Reconnaissance, and Intelligence Group | SRIG Headquarters<br>Signals Intelligence<br>Communications<br>Intelligence<br>ANGLICO<br>Force Reconnaissance |

Appendix A provides a list of all these communities and the T/E numbers that are associated to each.

## B. EQUIPMENT ASSOCIATION

The Marine Corps has, literally, thousands of different types of equipment in its inventory. Only a select few, however, are considered readiness reportable. The

next tasks are to identify these readiness reportable items, associate each to the communities that rates them, and initiate an equipment versus community matrix.

### 1. Marine Corps Bulletin 3000

Every year, HQMC publishes the MCBul 3000, Table of Marine Corps Automated Readiness Evaluation System Logistics Reportable Equipment. This bulletin identifies the mission essential principal end items along with combat essential equipment items selected for equipment status reporting within the Marine Corps in support of SORTS [Ref. 7:pp. 1-2]. It identifies, in TAMCN sequence, all readiness reportable end items. If an item is to be considered a pacing item for a specific organization, their T/E number will appear adjacent to the TAMCN.

The MCBul 3000 was used to identify all readiness reportable equipment belonging to the ground FMF. The current edition lists 186 TAMCNs as readiness reportable. Those items that applied only to the aviation communities were disregarded. There remained 146 readiness reportable items belonging to the ground communities.

### 2. Matching Equipment with Communities

Each TAMCN was reviewed in the Table of Equipment System software. Another option from the main menu of this program was "Review Single TAMCN". The output from this option displayed all T/E numbers that rate an entered TAMCN [Ref. 14]. All 146 readiness reportable pieces of equipment were run through this option. An item was associated to a particular community if a T/E number belonging to the community rated the item.

### 3. Building the Initial Matrix

With the identification of the ground communities and the readiness reportable equipment associated to each, an initial matrix was ready to be established. Across the horizontal axis, the 20 different communities were listed. Readiness reportable

equipment was listed down the vertical axis in TAMCN sequence. The body of the matrix was filled with "Xs" to merely identify which equipment was associated to which communities.

## C. RANKING AND CLASSIFICATION

The most important element of this study was acquiring accurate rankings of each community's readiness reportable equipment in terms of that community's mission. The ranking was the driver to community criticality weight assignments.

### 1. Community Advocate Solicitations

The collection of rankings of readiness reportable equipment was concentrated at the Marine Expeditionary Force located at Camp Pendelton, California. This area was chosen due to its close proximity to Monterey should travel be required and because it shared the same time zone. All communities were represented at this location except the signals intelligence community. The Second Radio Battalion located at Camp Lejeune, North Carolina was solicited for this input. Current FMF members of each community were contacted to solicit prioritized rankings of readiness reportable equipment. Community advocates were contacted verbally and provided with a fax copy of the authorized readiness reportable equipment listed in TAMCN sequence. Advocates were instructed to provide a prioritized ranking of the list in terms of the community's mission. As rankings were received from each community, the equipment versus community matrix was updated to reflect the ranking. Appendix B contains the points of contact for each community who forwarded rankings in support of this thesis.

### 2. Community Criticality Weight Assignment

The theory behind ABC classification, as described in Chapter III, was applied to each community's ranking. Instead of dividing the list into three groups, however, four groups were used to better distribute the disparity in criticality among the

different items. Those items that were ranked in the top 10 percent were assigned a criticality weight of 4. Items that fell between the top 10 and 25 percent were assigned a weight of 3. A weight of 2 was given to items that ranked between the top 25 to 50 percent. All items that were ranked below the 50 percent mark were given a criticality weight of 1. The community criticality weight represented the order of magnitude that an item has on an organization's ability to execute their wartime mission. An item with a weight of 4 that is declared deadlined will have four times the negative impact on the units equipment readiness than an item with a weight of only 1. Criticality weights were placed into the matrix based on the above criteria for each community. Appendix C displays the final matrix.

The matrix did an outstanding job of articulating how the criticality of an item can vary across the different ground communities. Every community rated TAMCN D1158 which is a High Mobility Multi-Wheeled Vehicle (HMMWV). A community criticality weight of 4 was assigned to this item by three communities, and yet five communities ranked the item in the bottom 50 percentile and a weight of 1 was assigned. Three ordinance items, E0980, M2 .50 caliber machine gun; E0989, M240G machine gun; and E0994, MK-19 40mm machine gun were rated by almost all communities. If we look at the spread of criticality weights, we see that those communities associated to the Division generally rated them higher; those associated to the FSSG generally rated them lower. An engineering item such as the B0953, MEP-005 generator, was rated high by the FSSG and SRIG communities but much lower by Division communities. In any case, the variability of the impact that an item has on the missions of the different FMF ground communities is clearly visible.

## D. INCORPORATION OF COMMUNITY CRITICALITY WEIGHTS INTO THE LM2 REPORT

Consideration needs to be given to the community criticality weight of a deadlined item when computing an organization's equipment readiness. The previous chapter discussed recommended changes to the methodology of computing readiness ratings required to incorporate the community criticality weight. Changes that are needed in the LM2 report format to accommodate the change in methodology will be examined in the following:

### 1. Individual Community Criticality Weight

The community criticality weight must have visibility when a deadlined item is listed on a units LM2 report. A field entitled "CC WT" should appear between the equipment ID number and the original date deadlined. The value placed here will come from the matrix and will represent the magnitude of the negative impact that the deadlined item has on the organization's equipment readiness.

### 2. Average TAMCN Community Criticality Weight

The average community criticality weight of each TAMCN needs to be reflected on the report. In most instances, this will be the weight reflected in the matrix for that TAMCN. For some task-organized units, however, this will not be the case. A Marine Expeditionary Unit (MEU) is a task-organized unit made up of different communities. The unit is comprised of detachments from the division, FSSG, and SRIG. In this case, the TAMCN community criticality weight will be an average value derived from the summation of criticality weights of all the communities that possess the item, divided by the total quantity. The following example illustrates this point.

The 22 MEU rates 14 A2167, AN/VRC-88As. The following illustrates the distribution of this item among the different MEU communities along with the associated community criticality weight, per Appendix C:

| Detachment Type | Qty | CC Weight |
|---|---|---|
| MEU Headquarters | 2 | 1 |
| Infantry Battalion | 6 | 2 |
| Artillery Battery | 1 | 3 |
| AAV Company | 1 | 2 |
| MEU Service Support Element | 2 | 3 |
| Communications Detachment | 2 | 1 |

In this example, the 22 MEU LM2 report would reflect a TAMCN community criticality weight for A2167 of [(2*1)+(6*2)+(1*3)+(1*2)+(2*3)+(2*1)]/14 = 27/14 = 1.93. If the artillery battery's or the MEU Service Support Element's AN/VRC-88A becomes deadlined, it would have a larger negative impact on 22 MEU's equipment readiness than if one were to be placed in a non-mission capable status belonging to the communications detachment.

A field entitled "TAM CC WT" should appear between the Excess Quantity and the Deadlined Serial Number fields. The value placed in this field will reflect the average community criticality weight of the respective TAMCN for that unit. Except in the instance of a task-organized unit, this will simply be the community criticality weight reflected in the matrix for that TAMCN. Figure 4.1 displays the modified notional LM2 report.

Notice the end item R rating is slightly different than that reflected in Figure 2.1, due to the new computation. The new R rating formula discussed in Chapter III is displayed at the bottom of Figure 4.1, along with the old S rating formula. If we multiply the possessed quantity for each TAMCN by the respective TAM criticality

MARES LM2 UNIT REPORT
HQ 19TH MAR

DATE 96/126
UIC PAGE 1 MC PAGE 56

UIC M12301 MAJOR CMD M12000

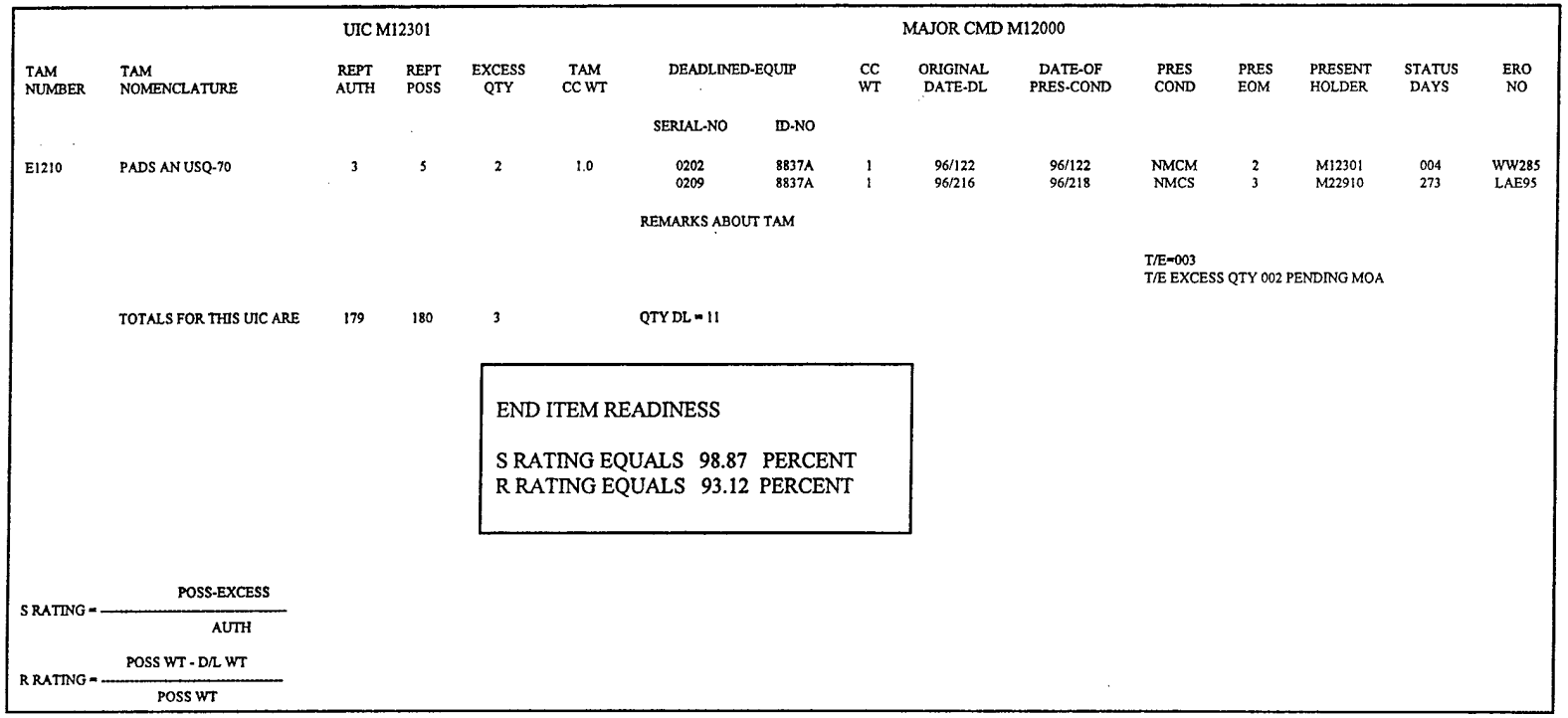
| TAM NUMBER | TAM NOMENCLATURE | REPT AUTH | REPT POSS | EXCESS QTY | TAM CC WT | DEADLINED-EQUIP SERIAL-NO | DEADLINED-EQUIP ID-NO | CC WT | ORIGINAL DATE-DL | DATE-OF PRES-COND | PRES COND | PRES EOM | PRESENT HOLDER | STATUS DAYS | ERO NO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A1440 | RADAR SET, AN/TPQ-36 | 4 | 4 | | 2.0 | 119A | 8211B | 2 | 96/082 | 96/082 | NMCS | 3 | M12301 | 044 | LAF68 |
| | | | | | | REMARKS ABOUT TAM | | | | | | | | | |
| | | | | | | | | | | T/E=005<br>DPYD QTY 001 TO M20181 | | | | | |
| A1957 | RADIO SET, AN/MRC-145 | 7 | 7 | | 2.0 | NONE REPORTED ON DEADLINE<br>REMARKS ABOUT TAM | | | | | | | | | |
| | | | | | | | | | | T/E=005<br>PLANNED ALLOWANCE OF QTY 009<br>FY98, QTY 007 RCVD ON HAND | | | | | |
| A2069 | RADIO SET, UHF AN PRC-113(V)3 | 2 | 2 | | 1.0 | NONE REPORTED ON DEADLINE<br>REMARKS ABOUT TAM | | | | | | | | | |
| | | | | | | | | | | T/E=002 | | | | | |
| A8082 | TSEC/KG-84A | 45 | 45 | | 1.0 | NONE REPORTED ON DEADLINE<br>REMARKS ABOUT TAM | | | | | | | | | |
| | | | | | | | | | | T/E=045 | | | | | |
| B0891 | GENERATOR SET 10KWMEP002 | 12 | 11 | | 2.0 | RZ80161 | 8084C | 2 | 96/122 | 96/124 | NMCM | 2 | M12301 | 002 | ATH71 |
| | | | | | | REMARKS ABOUT TAM | | | | | | | | | |
| | | | | | | | | | | T/E=012<br>T/E DEF QTY 002/12301-5334-GS04<br>BB (6110) | | | | | |
| B2462 | TRACTOR MED, FULL TRACK, D7G | 6 | 6 | | 1.0 | NONE REPORTED ON DEADLINE<br>REMARKS ABOUT TAM | | | | | | | | | |
| | | | | | | | | | | T/E=006 | | | | | |

Figure 4.1. Modified Notional LM2 Report

UIC M12301 MAJOR CMD M12000

| TAM NUMBER | TAM NOMENCLATURE | REPT AUTH | REPT POSS | EXCESS QTY | TAM CC WT | DEADLINED-EQUIP SERIAL-NO | ID-NO | CC WT | ORIGINAL DATE-DL | DATE-OF PRES-COND | PRES COND | PRES EOM | PRESENT HOLDER | STATUS DAYS | ERO NO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D1059 | 5-TON TRK M813 | 50 | 49 | | 3.0 | 5475371 | 8087B | 3 | 96/115 | 96/126 | NMCM | 2 | M12301 | 000 | AUL54 |
| | | | | | | 558264 | 8262A | 3 | 96/221 | 96/221 | NMCM | 4 | M14330 | 005 | LN673 |
| | | | | | | 558354 | 8262A | 3 | 96/108 | 96/124 | NMCS | 2 | M12301 | 002 | AUN61 |
| | | | | | | REMARKS ABOUT TAM | | | | | | | | | |
| | | | | | | | | | | | T/E=054 | | | | |
| | | | | | | | | | | | QTY 001 SHIPPED TO MCLB R&R | | | | |
| | | | | | | | | | | | DPYD QTY 004 TO M20181 | | | | |
| D1158 | TRK CARGO, HMMWV M998/1038 | 32 | 33 | 1 | 3.0 | 529042 | 8770A | 3 | 96/125 | 96/125 | NMCS | 2 | M12301 | 001 | AUG61 |
| | | | | | | 535035 | 8770A | 3 | 96/125 | 96/125 | NMCM | 2 | M12301 | 001 | AUG65 |
| | | | | | | 535263 | 8770A | 3 | 96/120 | 96/126 | NMCS | 2 | M12301 | 000 | AUG64 |
| | | | | | | REMARKS ABOUT TAM | | | | | | | | | |
| | | | | | | | | | | | T/E=032 | | | | |
| | | | | | | | | | | | PLANNED ALLOW OF 010 FY97 | | | | |
| | | | | | | | | | | | QTY 001 RCVD AND ON HAND | | | | |
| D1212 | WRECKER M816/M936 | 2 | 2 | | 1.0 | 550910 | 8780A | 1 | 96/041 | 96/059 | NMCS | 2 | M12301 | 067 | AUP40 |
| | | | | | | REMARKS ABOUT TAM | | | | | | | | | |
| | | | | | | | | | | | T/E=002 | | | | |
| E0980 | MACH GUN CAL CAL 50 M2 | 10 | 10 | | 4.0 | NONE REPORTED ON DEADLINE | | | | | | | | | |
| | | | | | | REMARKS ABOUT TAM | | | | | | | | | |
| | | | | | | | | | | | T/E=010 | | | | |
| E1158 | NIGHT VISION SIGHT INDIV SERVD | 6 | 6 | | 1.0 | NONE REPORTED ON DEADLINE | | | | | | | | | |
| | | | | | | REMARKS ABOUT TAM | | | | | | | | | |
| | | | | | | | | | | | T/E=006 | | | | |

Figure 4.1 (Continued)



UIC M12301 MAJOR CMD M12000

| TAM NUMBER | TAM NOMENCLATURE | REPT AUTH | REPT POSS | EXCESS QTY | TAM CC WT | DEADLINED-EQUIP SERIAL-NO | DEADLINED-EQUIP ID-NO | CC WT | ORIGINAL DATE-DL | DATE-OF PRES-COND | PRES COND | PRES EOM | PRESENT HOLDER | STATUS DAYS | ERO NO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E1210 | PADS AN USQ-70 | 3 | 5 | 2 | 1.0 | 0202 | 8837A | 1 | 96/122 | 96/122 | NMCM | 2 | M12301 | 004 | WW285 |
| | | | | | | 0209 | 8837A | 1 | 96/216 | 96/218 | NMCS | 3 | M22910 | 273 | LAE95 |
| | | | | | | REMARKS ABOUT TAM | | | | | | | | | |
| | | | | | | | | | | | T/E=003 T/E EXCESS QTY 002 PENDING MOA | | | | |
| | TOTALS FOR THIS UIC ARE | 179 | 180 | 3 | | QTY DL = 11 | | | | | | | | | |

END ITEM READINESS

S RATING EQUALS 98.87 PERCENT
R RATING EQUALS 93.12 PERCENT

$$\text{S RATING} = \frac{\text{POSS-EXCESS}}{\text{AUTH}}$$

$$\text{R RATING} = \frac{\text{POSS WT - D/L WT}}{\text{POSS WT}}$$

Figure 4.1 (Continued)

weight and sum them, we get a POSS WT of 396. Summing up the criticality weights of the deadlined equipment gives us a DL WT of 27. Plugging these values into the R rating formula yields a value of 93.12 percent. We would expect this rating to be slightly lower than the traditional rating since six of the eleven pieces of deadlined equipment have a criticality weight of 3. Notice that there is no longer a need to track pacing item and end item readiness separately since equipment formally flagged as a pacing item is likely to have a community criticality weight of 4 or 3 and its loss will impact the readiness rating at a magnitude commensurate with its importance to the war-fighting ability of the unit.

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# V. METHODOLOGY COMPARISON

This chapter shows how the proposed methodology of computing readiness ratings differs from the current method. The scenario presented in Chapter II will be reviewed and the new method of computing readiness ratings will be applied. The results will be compared to those generated in the original scenario.

## A. REVIEW OF THE ORIGINAL SCENARIO

In Chapter II, we looked at a scenario involving two sister artillery battalions (2/10 and 3/10) that had the same tables of equipment, each consisting of 210 pieces of authorized readiness reportable items. The excesses and deficiencies as well as a list of deadlined readiness reportable equipment, were presented for each unit. Readiness and supply ratings for each battalion were computed based on the current methodology. 2/10 had a pacing item readiness rating of 97.4 percent and an end item readiness rating of 91.94 percent. Those generated for 3/10 were 96.05 percent and 89.9 percent, respectively. Utilizing the current formula for generating readiness ratings, 2/10 reflected better readiness figures than 3/10 for both pacing items and end items.

## B. APPLICATION OF THE PROPOSED METHODOLOGY TO THE SCENARIO

In the original scenario, a deadlined item impacted the readiness ratings with equal weight, regardless of the item's relationship to the unit's mission. Considering the level of criticality of a deadlined item in the computation of readiness ratings, may vary the results significantly.

### 1. Required Additional Information

Recall that the new formula proposed to generate readiness ratings equals:

$$R\ rating = [(POSS\ WT - DL\ WT) / POSS\ WT]$$

In order to compute a readiness rating under the new methodology, a possessed weight is needed. For the purpose of this example, we will assume the average community criticality weight of an item belonging to the artillery community is 2.2. The authorized possessed weight for each battalion will then equal 2.2 * 210 = 462. This value will require adjustment to accommodate T/E deficiencies and excesses of readiness reportable gear.

Recall that in the original scenario, 2/10 was deficient one E0665, howitzer and was excess one B0953, MEP-005 generator and one D1059, 5-ton truck. Referring to the community versus equipment matrix in Appendix C reveals that these items have community criticality weights of 4, 3, and 1 respectively for the artillery community. Thus, 2/10's possessed weight would equal:

$$462 - 4 + 1 + 3 = \mathbf{462}$$

3/10 was deficient one D1059, 5-ton truck and one A2065, HF radio. These items have community criticality weights of 3 and 2 respectively. 3/10's possessed weight would equal:

$$462 - ( 3 + 2 ) = \mathbf{457}$$

### 2. Community Criticality Weights for Deadlined Equipment

The proposed methodology assigns different weights to readiness reportable equipment depending on the criticality of the item to the organization's wartime mission. These weights will vary from community to community and are depicted in the matrix presented in Appendix C. Utilizing this matrix, Table 5.1 displays the deadlined readiness reportable equipment and associated community criticality weights for 2/10. Those for 3/10 are depicted in Table 5.2.

**Table 5.1. 2/10's Deadlined Equipment and Associated Community Criticality Weight**

| TAMCN | Nomenclature | DL QTY | CC WT |
|---|---|---|---|
| A1935 | Radio Set, AN/MRC-138B(V) | 1 | 3 |
| A2065 | Radio Set, AN/PRC-104 | 2 | 2 |
| A2070 | Radio Set, AN/PRC-119A | 3 | 3 |
| A2508 | Switchboard, SB-3865 | 1 | 2 |
| B0891 | Generator Set, MEP-003 | 3 | 3 |
| D1158 | Truck, HMMWV, M998 | 3 | 3 |
| E0665 | Howitzer, M198 | 2 | 4 |
| E1210 | AN/USQ-70 | 1 | 4 |
| E3250 | Radar Chronograph, M-90 | 1 | 4 |

**Table 5.2. 3/10's Deadlined Equipment and Associated Community Criticality Weight**

| TAMCN | Nomenclature | DL QTY | CC WT |
|---|---|---|---|
| A2065 | Radio Set, AN/PRC-104 | 1 | 2 |
| A2069 | Radio Set, AN/PRC-113 | 1 | 1 |
| A2167 | Radio Set, AN/VRC-88A | 4 | 2 |
| A8082 | TSEC/KG-84A | 6 | 1 |
| B0953 | Generator Set, MEP-005A | 3 | 1 |
| B1021 | Generator Set, MEP-006A/B | 2 | 1 |
| D1059 | Truck, 5-ton, M813 | 3 | 3 |
| E1158 | NVG, AN/PVS-4 | 1 | 1 |

### 3. Computation of Readiness Ratings

The deadlined weight will equal the sum of the products of deadlined quantities and the community criticality weight for each TAMCN. For 2/10, this value will equal

$$(1*3) + (2*2) + (3*3) + (1*2) + (3*3) + (3*3) + (2*4) + (1*4) + (1*4) = \mathbf{52}$$

Likewise, 3/10's deadlined weight will equal

$$(1*2) + (1*1) + (4*2) + (6*1) + (3*1) + (2*1) + (3*3) + (1*1) = \mathbf{32}$$

Utilizing the proposed readiness rating formula, the respective possessed weights, and the above deadlined weights, the following readiness ratings for each artillery battalion can be generated:

$$\text{2/10's R rating} = (462 - 52) / 462 = \mathbf{88.74}$$

$$\text{3/10's R rating} = (457 - 32) / 457 = \mathbf{93.0}$$

### 4. Computation of Supply Ratings

Changes were not proposed to the original formula for the computation of supply ratings. This formula was stated as:

$$\text{S Rating} = (\text{POSS} - \text{EXCESS}) / \text{AUTH}$$

The supply rating under the new methodology will be the same as the end item S ratings computed under the current method. These values were 99.52 percent and 99.05 percent for 2/10 and 3/10, respectively.

## C. SCENARIO COMPARISON

The current methodology of computing readiness ratings generates higher ratings for both pacing items and end items belonging to 2/10. If we consider the criticality of the deadlined equipment in terms of the organization's mission instead

of simply assuming equal impact on readiness for all reportable equipment, we get some very different results. As illustrated above, 3/10's readiness rating is over 4 percentage points greater than that of 2/10. Should an operational requirement for an artillery battalion arise, a war planner armed with the ratings generated from the proposed method would assume that 3/10's ability to perform its wartime mission is greater than that of 2/10, and 3/10 would be the logical choice for deployment. If we were to examine the deadlined equipment and consider its importance to the wartime mission of an artillery unit, this would be a logical assumption.

The proposed method of computing readiness ratings motivates organizations to allocate maintenance resources towards repairing those items that will provide the greatest contribution to the ability to perform their war-fighting mission. A deadlined item with a community criticality weight of 4 or 3 that is repaired will have a greater improvement on the readiness rating than if an item with a weight of 1 or 2 were to be repaired. Consideration of a deadlined items criticality weight in the computation of readiness ratings encourages the repair of the most critical items over those less critical.

No changes to the current supply ratings computation method were proposed with the exception of eliminating the need to monitor both a pacing item and an end item supply rating. The original S rating formula combined with the proposed method of computing the readiness rating will provide the Marine Corps with the capability to report both the portion of equipment available to the unit, along with the unit's ability to perform its assigned wartime mission which is purported to be the purpose of equipment readiness reporting.

## D. GENERATED RATINGS AND SURVEY COMPARISONS

In this section, scenarios were presented from four different communities. In each, a list of deadlined readiness reportable equipment was provided from two sister

units belonging to the same community, similar to the artillery scenario introduced in Chapter II. Additionally, each scenario contained the authorized quantities of readiness reportable equipment and a possessed weight, representing the sum of the product of the quantities multiplied by the community criticality weight for each TAMCN authorized to the unit. Without revealing any supply or readiness ratings, USMC officers were asked to look at the lists of deadlined equipment for each scenario and indicate which organization he/she considered more capable of accomplishing its wartime mission. Ratings were then generated using both methodologies and compared to the survey results.

### 1. Scenarios To Be Considered

A list of deadlined equipment from two units belonging to the same community and having identical T/Es was provided for each scenario. Assumptions included that there were no deficiencies and the quantity deadlined for each item equaled one. The following four scenarios were considered for the purpose of this survey:

- **Infantry Community** - authorized 89 pieces of readiness reportable equipment and a possessed weight of 186.9

| Unit "A" | | Unit "B" | |
|---|---|---|---|
| A2065 | Radio Set, AN/PRC-104 | A1935 | Radio Set, AN/MRC-138B (V) |
| A2298 | MX-9331B/URC | A2069 | Radio Set, AN/PRC-113(V)3 |
| A2508 | Switchboard, SB-3865 | D1059 | Truck, 5-ton, M813 |
| A8089 | TSEC/KG-194A | D1158 | Truck, HMMWV, M998 |
| D0880 | Water Bull, M149A2 | E0994 | MG, 40MM, MK-19, Mod-3 |
| D1159 | Truck, HMMWV, M1043 | E1065 | Mortar, 60MM, M224 |

E0180 Circle, Aim, M2A2

E1045 MULE, AN/PAQ-3

E1158 NVG, AN/PVS-4

E1912 FLD TEST SET, TOW

E3175 SU-36/P

E1095 Mortar, 81MM, M252

E1460 Sniper Rifle, M40A1

- **Amphibious Assault Community** - authorized 96 pieces of readiness reportable equipment and a possessed weight of 211.2.

| Unit "A" | | Unit "B" | |
|---|---|---|---|
| A2065 | Radio Set, AN/PRC-104 | A2070 | Radio Set, AN/PRC-119A |
| A2505 | Switchboard, SB-3614(V)TT | A2164 | Radio Set, ANVRC-83(V)2 |
| A8082 | TSEC/KG-84A | D0209 | Power Unit, MK48, Mod 0 |
| B0891 | Generator, MEP-003A | D0876 | Trailer, Powered, MK14, Mod 0 |
| B2567 | Tractor, AT 644E | E0846 | AAVP7A |
| D1002 | Truck, Ambulance, M1035 | E0997 | MG, 40MM, MK-19, Mod-3 |
| D1212 | Truck, Wrecker, M816 | | |
| E0980 | MG, .50 Cal, M2 | | |
| E0997 | MG, M60D | | |
| E1045 | MULE, AN/PAQ-3 | | |

- **Combat Engineer Community** - authorized 75 pieces of readiness reportable equipment and a possessed weight of 161.3.

| Unit "A" | | Unit "B" | |
|---|---|---|---|
| A1935 | Radio Set, AN/MRC-138B(V) | A2298 | MX-9331B/URC |
| B1021 | Generator, MEP-006A/B | A2505 | Switchboard, SB-3614 (V) |
| B1298 | Line Charge Launch Kit | A8082 | TSEC/KG-84A |
| D1059 | Truck, 5-ton, M813 | B0891 | Generator, MEP-003A |
| D1072 | Truck, Dump, M817 | B2604 | ROWPU |
| E0980 | MG, .50 Cal, M2 | D0877 | Trailer, Powered, MK15 |
| | | D1158 | Truck, HMMWV, M998 |
| | | E0915 | MK153 Mod 0 |
| | | E1159 | AN/TVS-5 |

- **Motor Transport Community** - authorized 82 pieces of readiness reportable equipment and a possessed weight of 177.

| Unit "A" | | Unit "B" | |
|---|---|---|---|
| A2065 | Radio Set, AN/PRC-104 | A1935 | Radio Set, AN/MRC-138B(V) |
| A2167 | Radio Set, AN/VRC-88A | D0209 | Power Unit, MK48, Mod 0 |
| D0880 | Water Bull, M149A2 | D0876 | Trailer, Powered, MK14 |
| D0881 | Trailer, Ribbon, MK18 | D1059 | Truck, 5-ton, M813 |
| D1158 | Truck, HMMWV, M998 | E0994 | MG, 40MM, MK-19, Mod-3 |
| E0989 | MG, M240G | | |

E1158 NVG, AN/PVS-4

E1159 AN/TVS-5

End item readiness ratings were computed for each scenario using both the current and proposed methodologies and displayed in Table 5.3.

**2. Survey of USMC Officers**

The four fictitious scenarios were presented in a survey administered to 50 USMC ground officers currently assigned to NPS. Participants were asked to examine the lists of deadlined equipment from the four communities and indicate which unit was considered more capable for each scenario. No readiness ratings were provided. Appendix D contains a copy of the survey and Table 5.3 contains the percentage of officers that indicated which unit was considered more capable for each scenario.

**Table 5.3 Readiness Ratings and Survey Results**

| Scenario | Unit | Current Rating | Proposed Rating | Survey Results |
|---|---|---|---|---|
| 1 (Infantry) | A | 87.6 | 93.6 | 78 |
| | B | 91.0 | 87.7 | 22 |
| 2 (Amphibious Assault) | A | 89.6 | 95.3 | 72 |
| | B | 93.7 | 91.9 | 28 |
| 3 (Combat Engineer) | A | 92.0 | 89.5 | 22 |
| | B | 88.0 | 93.2 | 78 |
| 4 (Motor Transport) | A | 90.2 | 94.9 | 92 |
| | B | 93.9 | 91.5 | 08 |

### 3. Comparison Between Computed Ratings and Survey Results

The survey results support the premise that the proposed method does a better job of reflecting war-fighting ability than the current readiness rating method. For each scenario, the unit that the majority of Marine Corps officers felt was more capable of accomplishing their mission reflected a lower readiness rating when generated from the current methodology. When the criticality of the deadlined item was considered in the computation of readiness ratings, as it was under the proposed method, the results were directly in line with the majority opinion regarding war-fighting ability.

## E. OPPORTUNITIES FOR GAMING

It would be naive to think that the proposed method for computing the readiness rating was not susceptible to gaming or manipulation be field commands. The establishment of community criticality weights used in the "R" rating formula are based on the prioritized rankings of readiness reportable equipment as determined by FMF ground communities. Should a commander be more interested in simply reflecting a high readiness rating instead of one that reflects the organization's true war-fighting capability, he/she might be tempted to submit prioritized rankings that do not correlate to criticality of need. A weapon system that is maintenance intensive and often deadlined might be ranked low, regardless of its importance to the wartime mission of the community, so a small criticality weight will be assigned. On the other hand, a reliable piece of equipment that is seldom in a non-mission capable maintenance status might be ranked artificially high so it will assume a larger criticality weight. It will be incumbent upon the major subordinate command and MEF headquarters elements to be vigilant when reviewing community prioritized rankings of reportable equipment to ensure this has not occurred, prior to submitting them to HQMC.

# VI. CONCLUSIONS AND RECOMMENDATIONS

## A. CONCLUSIONS

The current method of computing ground equipment readiness employed by the Marine Corps is not compatible with the Marine Corps' definition of equipment readiness. The figures generated by the current formula do not correlate to the organization's ability to execute its war-fighting mission, but merely articulate the fraction of readiness reportable equipment that is in a mission capable status. The magnitude of the impact that a deadlined item has on an organization's equipment readiness rating should be relative to the criticality of that item in terms of the organization's assigned wartime mission. The current methodology only permits deadlined items to impact readiness ratings with an equal weight. Furthermore, the current method fails to incentivize the accomplishment of repairs on the more critical items over those that are less vital to the war-fighting capability of the organization.

This thesis proposed a method of assigning community criticality weights to readiness reportable equipment and considering those weights in the computation of readiness ratings in order to generate a rating that reflects true war-fighting ability instead of a mere percentage of available equipment. This method also provides incentives for commanders to allocate maintenance resources towards the repair of those items that will provide the maximum benefit to the fighting capability of the unit.

A part of the Marine Corps' definition of equipment readiness involves reflecting the portion of authorized equipment available for an organization's use. The current formula used to generate supply ratings computes the percentage of authorized equipment that is possessed by the unit, which does an adequate job of satisfying this part of the equipment readiness definition.

## B. RECOMMENDATIONS

### 1. Incorporate Community Criticality Weights When Computing Readiness Ratings

The premise of this thesis is that different readiness reportable items impact a unit's ability to function with varying magnitudes and that these magnitudes need to be considered when computing readiness ratings. The purpose of determining community criticality weights was to capture this magnitude that each readiness reportable item has on the different USMC ground community's ability to function. The Marine Corps needs to adopt this concept of assigning community criticality weights to all readiness reportable items.

The current methodology used to compute readiness ratings needs to be modified in order to consider the community criticality weight of a deadlined item. Chapter III discussed a new R rating formula designed to accomplish this exact task. In Chapter IV, modifications to the LM2 report were proposed in order to accommodate this new methodology which involved the addition of two new fields. It is recommended that the Marine Corps utilize this new formula for computing ground readiness ratings and make the suggested changes to the LM2 report format.

### 2. Cease Tracking Both Pacing Item and End Item Ratings

The Marine Corps currently tracks readiness and supply ratings for both pacing items and end items. The rating that is the lowest of the two gets reported up the chain of command as the equipment readiness input for SORTS. With the proposed methodology, there is no longer a requirement to track two sets of ratings. A deadlined item will influence the readiness rating by a magnitude that is commensurate to the item's community criticality weight. The critical nature of pacing items will insure that they are always assigned high criticality weights and will, therefore, have a heavy impact on readiness. With the adoption of the proposed method of computing readiness ratings, only one set of ratings is generated and required.

### 3. Decentralize the Determination of Community Criticality Weights

The three active Marine Expeditionary Forces (MEF) are strategically located throughout the globe. Each has a unique area of operation. The missions and priorities of each MEF are dictated by the threats and challenges present in that area. One master set of community criticality weights for the entire Marine Corps would not address these differences in priorities. It is recommended that each MEF be permitted to develop their own set of community criticality weights.

### 4. Annually Solicit Modifications to Established Community Criticality Weights

The Marine Corps operates in a very dynamic environment. The world around it is constantly changing along with the threats and missions that the Corps must be ready to face. New equipment is being developed and fielded on a regular basis. Changes in domestic social and political pressures cause fluctuations in personnel end strengths. It is important that community criticality weights assigned to readiness reportable equipment be periodically reviewed and adjusted as required. The Marine Corps currently conducts an annual solicitation for changes to the list of items considered readiness reportable. It is recommended that each MEF solicit adjustments to the community rankings of readiness reportable equipment in conjunction with this annual update and modify respective weights as required.

## C. OPPORTUNITIES FOR FURTHER STUDY

### 1. Inventory Protection Levels

Inventories of repair parts needed by the MEF ground communities are maintained within the SASSY Management Unit (SMU) of each FSSG. The stockage levels of these repair parts are determined by examining historical usage and applying an 85 percent protection level [Ref. 15]. This protection level is used consistently for all repair items regardless of the end item to which they apply. A review of the

community criticality weights assigned to readiness reportable equipment might provide a way to logically vary this protection level to provide better support to the most critical items. If we average the criticality weights of a piece of equipment across all the communities that rate the item, we can develop a sense of how critical the item is to the MEF as a whole. For instance, the TSEC/KG-84A, TAMCN A8082, is rated by 14 of the ground communities and has an average criticality weight of 1.07. An 85 percent protection level for the stockage of the critical repair parts that support this item might be acceptable. On the other hand, the AN/MRC-138B(V), TAMCN A1935, is rated by 16 communities and has an average criticality weight of 2.75. A higher protection level, perhaps 90 percent, might be warranted for the stockage of the critical repair parts that support this item. The tank community is the only community that rates the M1A1 main battle tank, TAMCN E1888, and as might be expected, this item has a community criticality weight of 4. The critical repair parts that support this item might require stockage at a 95 percent protection level.

### 2. Incorporation of Fiscal Data Into Reported Readiness Ratings

This thesis proposes a new method of computing equipment readiness figures and provides for the reporting of only one set of ratings, an S and R rating. Interfacing the LM2 report with fiscal information would provide a third rating that might prove very useful to war planners. In addition to the S and R ratings, a fiscal rating displaying the dollar value required to bring a unit's equipment readiness to the highest level possible along with the associated rating could easily be generated.

All repair parts in the Marine Corps supply system have an associated Combat Essential-Criticality Code (CE-CC) that identifies the importance of the repair part in relation to the proper functioning of the end item. A CE-CC of 5 identifies a critical repair part belonging to a readiness reportable piece of equipment [Ref. 16:p. 4-4-20]. The Master Header Information File (MHIF) is a large database managed

by the Marine Corps Logistics Base (MCLB) in Albany, Georgia that contains the current price for every item that can be requisitioned in the Marine Corps supply system, including repair parts. This file is updated on a monthly basis. A fiscal rating could be generated which reflects the dollar value for all CE-CC 5 repair parts on order for the unit as well as the price of any T/E deficiencies of readiness reportable gear, thereby displaying the cost required to restore the unit's equipment readiness rating to the highest level materially possible. The potential readiness rating could accompany the fiscal rating. It should be noted that a unit would be precluded from achieving a potential readiness rating of 100 percent if there were any deadlined items reported on the unit's LM2 report in an NMCM status, which would indicate that something other than the need of a repair part is causing the item to be deadlined.

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## APPENDIX A. COMMUNITIES AND ASSOCIATED TABLES OF EQUIPMENT

| Community | T/E Number | T/E Descriptive Name |
|---|---|---|
| Division Headquarters | N101* | HQBN, 1ST MARDIV, FMF |
| | N102* | HQBN, 2ND MARDIV, FMF |
| | N103* | HQBN, 3RD MARDIV, FMF |
| Infantry | N111* | INFREGT, 1ST MARDIV |
| | N112* | INFREGT, 2ND MARDIV |
| | N113* | INFREGT, 3RD MARDIV |
| | N116* | INFBN, INFREGT, 1ST MARDIV |
| | N117* | INFBN, INFREGT, 2ND MARDIV |
| | N118* | INFBN, INFREGT, 3RD MARDIV |
| Artillery | N210* | ARTYREGT, 1ST MARDIV |
| | N2110 | D/S(T)BN, ARTYREGT, 1ST MARDIV |
| | N220* | ARTYREGT, 2ND MARDIV |
| | N2210 | D/S(T)BN(M198), ARTYREGT, 2ND MARDIV |
| | N230* | ARTYREGT, 3D MARDIV |
| | N2310 | D/S(T)BN(M198), ARTYREGT, 3D MARDIV |
| Tank | N151* | 1ST TANKBN, 1ST MARDIV |
| | N152* | 2ND TANKBN, 2ND MARDIV |
| Assault Amphibian | N161* | ASLT AMPHIBBN, 1ST MARDIV |
| | N162* | ASLT AMPHIBBN, 2D MARDIV |
| Light Armored Reconnaissance | N171* | LIGHT ARMORED INFBN, 1ST MARDIV |
| | N172* | LIGHT ARMORED INFBN, 2ND MARDIV |
| Combat Engineer | N131* | COMBAT ENGRBN, 1ST MARDIV |
| | N132* | COMBAT ENGRBN, 2ND MARDIV |
| | N133* | COMBAT ENGRBN, 3D MARDIV |
| FSSG Headquarters | N311* | H&SBN, 1ST FSSG |
| | N321* | H&SBN, 2ND FSSG |
| | N331* | H&SBN, 3D FSSG |

| | | |
|---|---|---|
| Supply | N312* | SUPBN, 1ST FSSG |
| | N322* | SUPBN, 2ND FSSG |
| | N332* | SUPBN, 3D FSSG |
| Maintenance | N313* | MAINTBN, 1ST FSSG |
| | N323* | MAINTBN, 2ND FSSG |
| | N333* | MAINTBN, 3D FSSG |
| Landing Support | N314* | LDGSPTBN, 1ST FSSG |
| | N324* | LDGSPTBN, 2ND FSSG |
| Engineering Support | N315* | ENGRSPTBN, 1ST FSSG |
| | N325* | ENGRSPTBN, 2ND FSSG |
| | N335* | ENGRSPTBN, 3D FSSG |
| Motor Transport | N316* | MTBN, 1ST FSSG |
| | N326* | MTBN, 2ND FSSG |
| Medical | N317* | MEDBN, 1ST FSSG |
| | N327* | MEDBN, 2ND FSSG |
| | N337* | MEDBN, 3D FSSG |
| SRIG Headquarters | N4601 | HDQTRS, 1ST SRI GROUP |
| | N4701 | HQCO, 2D SRI GROUP |
| | N4801 | HDQTRS, 3D SRI GROUP |
| Intelligence | N4617 | INTELCO, 1ST SRI GROUP |
| | N4717 | INTELCO, 2D SRI GROUP |
| | N4807 | HQS, INTELCO, 3D SRI GROUP |
| Force Reconnaissance | N4618 | FORCE RECON CO, 1ST SRI GROUP |
| | N4718 | FORCE RECON CO, 2D SRI GROUP |
| ANGLICO | N4654 | ANGLICO, 1ST SRI GROUP |
| | N4754 | ANGLICO, 2D SRI GROUP |
| Signals Intelligence | N463* | 1ST RADIO BN |
| | N473* | RADIOBN, 2D SRI GROUP |
| Communications | N468* | COMMBN, 1ST SRI GROUP |
| | N478* | COMMBN, 2D SRI GROUP |
| | N488* | COMMBN, 3D SRI GROUP |

*Universal character

## APPENDIX B. COMMUNITY ADVOCATES

| Community | Points of Contact |
|---|---|
| Division Headquarters | MGySgt P. Krachenfels, 1st MarDiv, MMO |
| Infantry | 1stLt L. V. Parker, 1st Mar Regt, MMO |
| Artillery | Maj M. P. Wynn, 11th Mar Regt, S-4<br>Capt T. B. Dentry, 10th Mar Regt, MMO<br>Capt M. W. Shellabarger, 11th Mar Regt, MMO |
| Tank | 1stLt A. C. Eanniello, 1st Tank Bn, MMO<br>GySgt A. Ramos, 1st Tank Bn, MMC |
| Light Armored Reconnaissance | 1stLt A. S. Church, 1st LAR Bn, MMO<br>GySgt D. E. Askew, 1st LAR Bn, MMC |
| Assault Amphibious | 1stLt H. R. Blake, 3rd AABn, MMO<br>GySgt P. T Bell, 3rd AABn, MMC |
| Combat Engineers | Maj D. W. Sapp, 1st Combat Engr Bn, XO |
| FSSG Headquarters | MSgt J. M. Powers, 1st FSSG, MMC<br>SSgt L. R. Wolfe, H&S Bn, 1st FSSG, MMC |
| Maintenance | SSgt M. J. Nemerov, 1st Maint Bn, MMC |
| Landing Support | Maj D. A. Ingebretsen, 1st Landing Supp Bn, XO<br>Capt D. M. Hyde, 1st Landing Supp Bn, MMO |
| Engineer Support | 1stLt M. C. Varicak, 7th Engr Supp Bn, S-4 |
| Supply | CWO3 D. L. Cowley, 1st Supp Bn |
| Motor Transport | MSgt A. W. Joy, 7th Mtr Trsnsp Bn, MMC<br>GySgt J. R. Javier, 7th Mtr Transp Bn, Truckmaster |

| | |
|---|---|
| Medical | 1stLt G. McLain, 1st Medical Bn, S-4 |
| SRIG Headquarters | SSgt A. F. Cassagnol, 1st SRIG |
| Signals Intelligence | Capt M. Ferace, 2nd Radio Bn, S-3 |
| Communications | CWO3 M. E. Gribben, 9th Comm Bn<br>MSgt Dierig, 9th Comm Bn, MMC |
| Intelligence | SSgt F.Braneski, 1st Intel Co, S-4 |
| ANGLICO | 1stLt S. D. Burke, 1st ANGLICO, S-4 |
| Force Reconnaissance | 1stLt C. R. McGregor, 1st For Recon Co, S-4 |

# APPENDIX C. COMMUNITY CRITICAL BY WEIGHTS

| | | DIV HQ | INFANTRY | ARTILLARY | TANK | LAR | AAV | CMBT ENGR | FSSG HQ | MAINT | LNDG SUP | ENGR SUP | SUPPLY | MTR TRANS | MEDICAL | SRIG HQ | SIG INTEL | COMM | INTEL | ANGLICO | FOR RECON |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TAMCN | Nomenclature | | | | | | | | | | | | | | | | | | | | |
| A0056 | AN/USA-32 | | | | | | | | | | | | | | | | | | 2 | | |
| A0248 | AN/TTC-42 | 1 | | | | | | | 4 | | | | | | | | | 3 | | | |
| A0258 | AN/MSC-63A | 1 | | | | | | | | | | | | | | | 3 | 2 | | | |
| A0274 | AN/TSC-120 | | | | | | | | | | | | | | | | | 2 | | | |
| A0311 | AN/TSQ-84 | 1 | | | | | | | 3 | | | | | | | | | 3 | | | |
| A0412 | AN/ULQ-19(V)1 | | | | | | | | | | | | | | | | 3 | | | | |
| A0656 | AN/TSC-96 | | | | | | | | | | | | | | | | | 2 | | | |
| A0812 | AN/TSC-85A/B | | | | | | | | | | | | | | | | | 4 | | | |
| A0814 | AB/TSC-93B/(V)1 | | | | | | | | | | | | | | | | | 3 | | | |
| A0860 | AN/TSQ-54A | | | | | | | | | | | | | | | | 1 | | | | |
| A0865 | AN/TSQ-103A | | | | | | | | | | | | | | | | 1 | | | | |
| A0891 | AN/UPS-3 | | | | | | | | | 1 | | | | | | | | | | | |
| A0917 | AN/PSC-3 | | | | | | | | 3 | | | | | | | | 4 | 1 | | 3 | |
| A1224 | AN/TSQ 129A | 1 | | | | | | | | | | | | | | | | | | | |
| A1228 | CY-8680/G | | | | | | | | | | | | | | | | | | 2 | | |
| A1265 | C-9066/GSQ | | | | | | | | | | | | | | | | | | 2 | | |
| A1310 | OE-361(V)2/G | | | | | | | | | | | | | | | | | 4 | | | |
| A1415 | AN/PPS-15A(V)2 | | | | | | | | | 1 | | | | | | | | | | | |
| A1440 | AN/TPQ-36(V)5 | | | 4 | | | | | | | | | | | | | | | | | |
| A1695 | AN/USQ-46A | | | | | | | | | | | | | | | | | | 3 | | |
| A1716 | AN/GRR-8(V) | | | | | | | | | | | | | | | | 1 | | | | |
| A1795 | AN/GRC-193B(V) | | | | | | | | | 1 | | | | | | | | 1 | | | |
| A1815 | AN/GRC-160 | | | | | | | | | 1 | | | | | 2 | 1 | | | | | |
| A1920 | AN/MRC-140 | | | | | | | | | | | | | | | | | 1 | | | |
| A1930 | AN/MRC-110A | | | | | | | | | | | | | | | | 1 | | | | |
| A1935 | AN/MRC-138B(V) | 4 | 4 | 3 | 1 | 2 | 3 | 2 | 4 | | 3 | 3 | | 2 | 2 | | 3 | 2 | | 4 | 2 |
| A1955 | AN/MRC-142 | 2 | | 3 | | | | | 4 | | | | | | | | | 2 | | | |
| A2050 | AN/PRC-77 | | | | | | | | 1 | 1 | 1 | | | | 1 | 1 | 1 | | | 1 | 1 |
| A2065 | AN/PRC-104 | 1 | 1 | 2 | 1 | 2 | 1 | | 1 | | 1 | 1 | | 1 | 1 | 1 | 3 | 1 | 3 | 1 | |
| A2069 | AN/PRC-113(V)3 | 1 | 4 | 1 | 1 | 2 | | | 1 | | 3 | 1 | | | | 1 | 4 | 1 | 4 | 2 | 2 |
| A2070 | AN/PRC-119A | 2 | 4 | 3 | 3 | 2 | 3 | 2 | 1 | 1 | 3 | 2 | | 1 | 2 | 1 | 4 | 1 | 1 | 2 | 2 |
| A2164 | AN/VRC-83(V)2 | 1 | 2 | 1 | | 2 | 3 | | | | | | | | | 1 | 3 | 1 | | 4 | 1 |
| A2167 | AN/VRC-88A | 1 | 2 | 2 | 3 | 2 | 2 | | 3 | 1 | 1 | 1 | | 1 | 1 | | | 1 | 4 | | |
| A2171 | AN/VRC-92A | | | 2 | 3 | 2 | | | | | | | | | | | | | | | |
| A2175 | R2D2 | | | | | | | | | | | | | | | | 4 | | | | |
| A2179 | AN/TRC-170(V) | | | | | | | | | | | | | | | | | 2 | | | |
| A2275 | RO-376A/USQ | | | | | | | | | | | | | | | | | | 2 | | |
| A2297 | AN/GRQ-21 | | | | | | | | | | | | | | | | | | 2 | | |
| A2298 | MX-9331B/URC | 1 | 1 | 1 | 1 | | | 1 | 3 | 1 | 1 | 1 | | | 1 | | 1 | | | 1 | 2 |
| A2304 | AN/GRQ-26 | | | | | | | | | | | | | | | | | | 2 | | |
| A2505 | SB-3614 (V)TT | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | | 1 | | | | | | 1 | 1 | | | |
| A2508 | SB-3865 | 2 | 1 | 2 | | | | | 4 | | 1 | | | | | | 1 | 2 | | | |
| A2811 | OQ-60/USQ-46 | | | | | | | | | | | | | | | 1 | | | | | |
| A3012 | TS-3470/USM | | | | | | | | | | | | | | | | | | 1 | | |
| A8032 | TSEC/KY-58 | | | | | | | | | | | | | | | | | 1 | | | |
| A8082 | TSEC/KG-84A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | | 1 | 2 | 1 | | |
| A8089 | TSEC/KG-194A | 1 | 1 | 1 | | | | | 1 | | 1 | | | | | | 1 | 4 | | | |
| A8090 | TSEC/KG-194 | 1 | | | | | | | 1 | | | | | | | | | 2 | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| B0001 | AC, 60HZ, 9000BTU | 1 | | | | | | | 2 | | | | | | | | | 3 | | | |
| B0002 | AC, 60HZ, 18000BTU | 1 | | | | | | | 2 | | | | | | | | | 3 | | | |
| B0003 | AC, A/E 32C-17 | 1 | | 1 | | 1 | | | 2 | 3 | | | | | | 1 | 2 | 2 | 1 | 1 | |
| B0004 | AC, A/E 32C-18 | | | 1 | | | | | | | | | | | | | | | | | |

| | | DIV HQ | INFANTRY | ARTILLARY | TANK | LAR | AAV | CMBT ENGR | FSSG HQ | MAINT | LNDG SUP | ENGR SUP | SUPPLY | MTR TRANS | MEDICAL | SRIG HQ | SIG INTEL | COMM | INTEL | ANGLICO | FOR RECON |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TAMCN | Nomenclature | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| B0005 | AC, A/E 32C-24 | 1 | | 1 | | | | | 2 | 3 | | 1 | | | | 1 | 2 | 2 | 1 | | |
| B0006 | AC, A/E 32C-25 | | | | | | | | | | | | | | | | | | | | |
| B0011 | AC, A/E 32C-39 | 1 | | | | | | | | 3 | | | | | | 1 | | 1 | 1 | | |
| B0114 | USCSBMK2 | | | | | | | | | | | 1 | | | | | | | | | |
| B0120 | BRDG, FXD-FLTNG, (MGB) | | | | | | | | | | | 1 | | | | | | | | | |
| B0152 | BRDG, MED GRDR, DRY GAP | | | | | | | | | | | 1 | | | | | | | | | |
| B0391 | CON HNDLR, RT, 50KLBS | | | | | | | | | | 3 | | | | | | | | | | |
| B0446 | CRANE, RT HYDRLC LT | | | | | | | 2 | | 1 | 2 | 1 | | | | | | 1 | | | |
| B0475 | PSS-11 | | | | | | | 4 | | | 1 | 1 | | | | | | | | | |
| B0685 | FUEL SYS, M69HC | | | | | | | | | | | 2 | | | | | | | | | |
| B0891 | MEP-003A | 2 | | 3 | 1 | 1 | 1 | 1 | | 4 | | 2 | | | | 2 | 1 | 3 | 1 | 2 | |
| B0953 | MEP-005A | 2 | | 1 | 1 | 1 | 1 | 3 | | 3 | | 3 | | | | 3 | 2 | 3 | 1 | | |
| B0971 | MEP-114A | | | | | | | 1 | | 1 | | 1 | | | | | | | | | |
| B1021 | MEP-006A/B | 2 | | 1 | | 1 | 1 | 3 | | 1 | | 1 | | | | 3 | 2 | 4 | | | |
| B1045 | MEP-007A | 2 | | | | | | 1 | | 4 | | 1 | | | | 2 | | 1 | | | |
| B1082 | GRADER, 130-G | | | | | | | 2 | | | 2 | 2 | | | | | | | | | |
| B1298 | LINE CHRG LAUNCH KIT | | | | | | | 4 | | | | 1 | | | | | | | | | |
| B1580 | SIXCON, FUEL MOD | 3 | | 1 | | 1 | 1 | | 1 | 3 | 2 | 1 | | 1 | | 1 | 1 | 1 | | | |
| B1922 | SCRAPER-TRACTOR | | | | | | | | | | | 2 | | | | | | | | | |
| B2085 | SIXCON, FUEL TANK | | | 2 | | 1 | 1 | | 1 | 3 | 2 | 2 | | 1 | | | 1 | 1 | | | |
| B2460 | TRACTOR, FT, T-5 | | | | | | | | | | 1 | 2 | | | | | | | | | |
| B2462 | TRACTOR, FT, D7G | | | 1 | | | | | | | 2 | 3 | | | | | | | | | |
| B2482 | TRACTOR, FLU 419 | | | | | | | | | | | 3 | | | | | | | | | |
| B2561 | TRUCK, FORKLIFT, EB | | | | | | | | | | 4 | | | | | 4 | | 1 | | | |
| B2566 | TRUCK, FORKLIFT, 4000LB | | | 1 | | | | | | 2 | 4 | 1 | | | | | | 1 | | | |
| B2567 | TRACTOR, AT 644E | | | 2 | 2 | 1 | 1 | 3 | | 2 | 4 | 3 | | | | | | | | | |
| B2604 | ROWPU | | | | | | | 2 | | | | 2 | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| D0209 | POWER UNIT, MK48 MOD 0 | | | 2 | 2 | 2 | 2 | 3 | | 4 | | 4 | | 4 | | | | 1 | | | |
| D0215 | SEMITRLR, REFUEL, M970 | | | | | | | | | | | | | 3 | | | | | | | |
| D0235 | SEMITRLR, LOW-BED, M870 | | | 2 | 2 | 1 | | 3 | | | | 4 | | 3 | | | | | | | |
| D0876 | TRLR, PWRD, MK14, MOD 0 | | | 1 | 1 | 2 | 2 | 1 | | | | | | 4 | | | | 1 | | | |
| D0877 | TRLR, PWRD, MK15, MOD 0 | | | 1 | 1 | 1 | | 1 | | 4 | | 1 | | 3 | | | | | | | |
| D0878 | TRLR, PWRD, MK16, MOD 0 | | | 1 | 1 | 1 | | 2 | | | | 2 | | 3 | | 1 | | | | | |
| D0879 | TRLR, PWRD, MK17, MOD 0 | | | 1 | 1 | 1 | 2 | | | | | | | 4 | | | | | | | |
| D0880 | TRLR, TNK, WATER, M149A2 | 3 | 1 | 3 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 1 | 1 | | 1 | 1 |
| D0881 | TRLR, RIBBON, MK18 | | | | | | | | | | | 1 | | 2 | | | | | | | |
| D1001 | TRUCK, AMB, M997 | | | | 2 | | | | 1 | | | | | | 4 | | | | | | |
| D1002 | TRUCK, AMB, M1035 | 3 | 2 | 1 | | 1 | 1 | 1 | 1 | | 1 | 2 | | | 4 | 1 | 2 | 1 | | | |
| D1059 | TRUCK, 5-TON, M813/923/925 | 4 | 3 | 3 | 3 | 2 | 2 | 3 | 2 | 1 | 3 | 4 | 4 | 3 | 3 | 2 | 2 | 4 | 1 | 1 | 1 |
| D1061 | TRUCK, 5-TON, M814/927/928 | | | | | | | | | 2 | | 4 | 2 | | | 4 | | | | | |
| D1072 | TRUCK, DUMP, M817/929/930 | | | | | | | 4 | | | 2 | 3 | | | | | | | | | |
| D1125 | TRUCK, HMMWV, M1045/46 | | 3 | | 1 | | | | | | | | | | | | | | | | |
| D1134 | TRUCK, TRCTR, M818/931 | | | | 2 | 1 | 1 | | | 3 | | | | 3 | | | | | | | |
| D1158 | TRUCK, HMMWV, M998 | 3 | 3 | 3 | 2 | 1 | 2 | 2 | 1 | 2 | 3 | 4 | 3 | 1 | 3 | 4 | 2 | 2 | 1 | 2 | 1 |
| D1159 | TRUCK, HMMWV, M1043/44 | 3 | 2 | 1 | 2 | 1 | | 2 | 1 | | | | | | | | | | | | |
| D1180 | TRUCK, SHLTR CARR, M1037 | | | | | | | | | | | | | | | | 2 | 3 | | | |
| D1212 | TRUCK, WRKR, M816/936 | 4 | | 1 | 2 | 2 | 1 | 1 | 2 | 4 | 1 | 3 | 2 | 2 | | 1 | 2 | 1 | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| E0040 | AN/GYK-29 | | | 1 | | | | | | | | | | | | | | | | | |
| E0145 | AN/TAM-4 | | | | | | | | | 2 | | | | | | | | | | | |
| E0149 | BRDG, SCISSOR FOR AVLB | | | | 2 | | | | | | | | | | | | | | | | |
| E0150 | BRDG, ARM VEH, M60A1 | | | | 2 | | | | | | | | | | | | | | | | |
| E0165 | PP-4884 | | 1 | | 1 | 1 | | | | 1 | | | | | | | | | | | |

| TAMCN | Nomenclature | DIV HQ | INFANTRY | ARTILLARY | TANK | LAR | AAV | CMBT ENGR | FSSG HQ | MAINT | LNDG SUP | ENGR SUP | SUPPLY | MTR TRANS | MEDICAL | SRIG HQ | SIG INTEL | COMM INTEL | ANGLICO | FOR RECON |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E0167 | PP-7382/TAS | | 1 | | | | | | | 1 | | | | | | | | | | |
| E0180 | CIRCLE, AIM, M2A2 | | 1 | 2 | | 3 | | | | | | | | | | | | | | |
| E0330 | AN/UAS-12A | | 3 | | 4 | 3 | | | | 2 | | | | | | | | | | |
| E0665 | HOWITZER, M198 | | | 4 | | | | | | | | | | | | | | | | |
| E0796 | AAVC7A | | | | | | 4 | | | | | | | | | | | | | |
| E0846 | AAVP7A | | | | | | 4 | | | | | | | | | | | | | |
| E0856 | AAVR7A | | | | | | 4 | | | 1 | | | | | | | | | | |
| E0915 | MK153 MOD 0 | | 1 | | | 2 | | 1 | | | | | | | | | | | | |
| E0935 | M220E4 | | 4 | | 4 | 3 | | | | 1 | | | | | | | | | | |
| E0942 | LAV-AT | | | | | 4 | | | | | | | | | | | | | | |
| E0946 | LAV-C | | | | | 4 | | | | | | | | | | | | | | |
| E0947 | LAV-25 | | | | | 4 | | | | | | | | | | | | | | |
| E0948 | LAV-L | | | | | 4 | | | | | | | | | | | | | | |
| E0949 | LAV-M | | | | | 4 | | | | | | | | | | | | | | |
| E0950 | LAV-R | | | | | 3 | | | | | | | | | | | | | | |
| E0980 | MG, .50. BROWNING, M2 | 3 | 2 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 3 | 1 | 1 | | |
| E0984 | MG, .50, M2 | | | | | | | | | | | | | | | | | | | |
| E0989 | MG, M240G | 3 | 2 | 2 | 3 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | | 3 | 1 | | | 4 |
| E0991 | MG, M60D | | | | | | 1 | | | 1 | | | | | | | | | | |
| E0994 | MG, 40MM, MK-19, MOD-3 | 2 | 2 | 2 | 4 | 3 | | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 2 | | 1 | | |
| E0997 | MG, 40MM,MK1-19,MOD-3 | | | | | | 3 | | | | | | | | | | | | | |
| E0999 | MG, .50, M2 HEAVY | | | | | | 3 | | | | | | | | | | | | | |
| E1032 | AN/TMQ-31 | | | 4 | | | | | | | | | | | | | | | | |
| E1045 | AN/PAQ-3 | 1 | 1 | 2 | 1 | 1 | | | | | | | | | | | | | 3 | 3 |
| E1065 | MORTAR, 60MM, M224 | | 2 | | | | | | 1 | | | | | | | | | | | |
| E1095 | MORTAR, 81MM, M252 | | 3 | | | 3 | | | | | | | | | | | | | | |
| E1153 | AN/TAS-5 | | 1 | | | | | | | | | | | | | | | | | |
| E1158 | AN/PVS-4 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | | 1 | 1 | | | | 1 | 3 |
| E1159 | AN/TVS-5 | 1 | 1 | 1 | 1 | 1 | | 1 | 2 | 2 | | | 1 | 1 | | 2 | 1 | | | |
| E1210 | AN/USQ-70 | | | 4 | | | | | | | | | | | | | | | | |
| E1377 | RECOVERY VEH, M88A1 | | | | 3 | | | | | 1 | | | | | | | | | | |
| E1460 | SNIPER RIFLE, M40A1 | 2 | 2 | | | | | | | 1 | | | | | | | | | | 4 |
| E1475 | SNIPER RIFLE, .50, REPTR | 1 | 2 | | | | | | | | | | | | | | | | | 1 |
| E1888 | TANK, M1A1 | | | | 4 | | | | | | | | | | | | | | | |
| E1908 | TEST KIT, SUPP, GM | | | | | | | | | 2 | | | | | | | | | | |
| E1911 | AN/TSM-152 | | 1 | | 1 | 1 | | | | 2 | | | | | | | | | | |
| E1912 | FLD TEST SET, TOW | | 1 | | 1 | 1 | | | | 3 | | | | | | | | | | |
| E1915 | AN/TSM-114 | | | | | | | | | 2 | | | | | | | | | | |
| E1916 | AN/TSM-128 | | | | | | | | | 2 | | | | | | | | | | |
| E1947 | AN/TAM-3A | | | | 1 | | | | | 2 | | | | | | | | | | |
| E3175 | SU-36/P | | 1 | | | | | | | | | | | | | | | | | |
| E3250 | RADAR CHRONOGRAPH | | | 4 | | | | | | | | | | | | | | | | |

## APPENDIX D. USMC OFFICER SURVEY

Each scenario below contains lists of readiness reportable equipment that is deadlined for two units belonging to the same community and having identical T/Es. Indicate, by circling, the unit which you consider more capable of accomplishing its wartime mission for all four scenarios.

### Infantry Community

| Unit "A" | | Unit "B" | |
|---|---|---|---|
| A2065 | Radio Set, AN/PRC-104 | A1935 | Radio Set, AN/MRC-138B (V) |
| A2298 | MX-9331B/URC | A2069 | Radio Set, AN/PRC-113(V)3 |
| A2508 | Switchboard, SB-3865 | D1059 | Truck, 5-ton, M813 |
| A8089 | TSEC/KG-194A | D1158 | Truck, HMMWV, M998 |
| D0880 | Water Bull, M149A2 | E0994 | MG, 40MM, MK-19, Mod-3 |
| D1159 | Truck, HMMWV, M1043 | E1065 | Mortar, 60MM, M224 |
| E0180 | Circle, Aim, M2A2 | E1095 | Mortar, 81MM, M252 |
| E1045 | MULE, AN/PAQ-3 | E1460 | Sniper Rifle, M40A1 |
| E1158 | NVG, AN/PVS-4 | | |
| E1912 | FLD TEST SET, TOW | | |
| E3175 | SU-36/P | | |

### Amphibious Assault Community

| Unit "A" | | Unit "B" | |
|---|---|---|---|
| A2065 | Radio Set, AN/PRC-104 | A2070 | Radio Set, AN/PRC-119A |
| A2505 | Switchboard, SB-3614(V)TT | A2164 | Radio Set, ANVRC-83(V)2 |
| A8082 | TSEC/KG-84A | D0209 | Power Unit, MK48, Mod 0 |
| B0891 | Generator, MEP-003A | D0876 | Trailer, Powered, MK14, Mod 0 |
| B2567 | Tractor, AT 644E | E0846 | AAVP7A |
| D1002 | Truck, Ambulance, M1035 | E0997 | MG, 40MM, MK-19, Mod-3 |
| D1212 | Truck, Wrecker, M816 | | |
| E0980 | MG, .50 Cal, M2 | | |
| E0997 | MG, M60D | | |
| E1045 | MULE, AN/PAQ-3 | | |

## Combat Engineer Community

| Unit "A" | | Unit "B" | |
|---|---|---|---|
| A1935 | Radio Set, AN/MRC-138B(V) | A2298 | MX-9331B/URC |
| B1021 | Generator, MEP-006A/B | A2505 | Switchboard, SB-3614(V)TT |
| B1298 | Line Charge Launch Kit | A8082 | TSEC/KG-84A |
| D1059 | Truck, 5-ton, M813 | B0891 | Generator, MEP-003A |
| D1072 | Truck, Dump, M817 | B2604 | ROWPU |
| E0980 | MG, .50 Cal, M2 | D0877 | Trailer, Powered, MK15,Mod 0 |
| D1158 | Truck, HMMWV, M998 | | |
| E0915 | MK153 Mod 0 | | |
| E1159 | AN/TVS-5 | | |

## Motor Transport Community

| Unit "A" | | Unit "B" | |
|---|---|---|---|
| A2065 | Radio Set, AN/PRC-104 | A1935 | Radio Set, AN/MRC-138B(V) |
| A2167 | Radio Set, AN/VRC-88A | D0209 | Power Unit, MK48, Mod 0 |
| D0880 | Water Bull, M149A2 | D0876 | Trailer, Powered, MK14 Mod 0 |
| D0881 | Trailer, Ribbon, MK18 | D1059 | Truck, 5-ton, M813 |
| D1158 | Truck, HMMWV, M998 | E0994 | MG, 40MM, MK-19, Mod-3 |
| E0989 | MG, M240G | | |
| E1158 | NVG, AN/PVS-4 | | |
| E1159 | AN/TVS-5 | | |

## APPENDIX E. GLOSSARY

| | |
|---|---|
| AMRR | Aircraft Material Readiness Report |
| CC WT | Community Criticality Weight |
| CE-CC | Combat Essential - Criticality Code |
| EOM | Echelon of Maintenance |
| ERO | Equipment Repair Order |
| FMF | Fleet Marine Force |
| FSSG | Force Service Support Group |
| HMMWV | High Mobility Multi-Wheeled Vehicle |
| HQMC | Headquarters Marine Corps |
| ID-NO | Item Designator Number |
| JCS | Joint Chiefs of Staff |
| LM2 | USMC Equipment Readiness Report |
| MAGTF | Marine Air Ground Task Force |
| MARES | Marine Corps Automated Readiness Evaluation System |
| MCBul | Marine Corps Bulletin |
| MCCDC | Marine Corps Combat Development Command |
| MCLB | Marine Corps Logistics Base |
| MEU | Marine Expeditionary Unit |
| MHIF | Master Header Information File |
| MIMMS | Marine Corps Integrated Maintenance Management System |
| MMC | Maintenance Management Chief |
| MMO | Maintenance Management Officer |
| MOOTW | Military Operations Other Than War |
| NMCM | Not Mission Capable Maintenance |
| NMCS | Not Mission Capable Supply |
| RM4 | LM2 Report Remark |
| SASSY | Supported Activity Supply System |
| SMU | SASSY Management Unit |
| SORTS | Status of Resources and Training System |
| SRIG | Surveillance, Reconnaissance, and Intelligence Group |
| TAMCN | Table of Authorized Materiel Control Number |
| T/E | Table of Equipment |
| T/O | Table of Organization |
| UIC | Unit Identification Code |
| USMC | United States Marine Corps |

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