

UNITED STATES MARINE CORPS
Logistics Operations School
Marine Corps Combat Service Support Schools
PSC Box 20041
Camp Lejeune, North Carolina 28542-0041

RLO D104

STUDENT OUTLINE

DETERMINING REQUIREMENTS

LEARNING OBJECTIVES

1. Terminal Learning Objective: Given an operation of a specific duration, commander's guidance, T/O&E, computed requirements, and the references, determine a units operational supply requirements, to ensure requested supplies are calculated for operational requirements.

2. Enabling Learning Objectives:

a. Given the references and commander's guidance, identify supply support requirements outlined in the operational order or applicable documents, per the references.

b. Given the references and commander's guidance, determine class I and water requirements, per the references.

c. Given the references and commander's guidance, identify class II requirements, per the references.

d. Given the references and commander's guidance, determine class III requirements, per the references.

e. Given the references and commander's guidance, identify class IV requirements, per the references.

f. Given the references and commander's guidance, determine class V requirements, per the references.

g. Given the references and commander's guidance, identify class VI requirements, per the references.

h. Given the references and commander's guidance, identify class VII requirements, per the references.

i. Given the references and commander's guidance, identify class VIII requirements, per the references.

OUTLINE

1. CLASSES OF SUPPLY

a. Class I. This class is broken down into two sub-classes.

(1) Class I subsistence, chow and health and welfare.

(2) Class I(W) water

b. Class II. This is the clothing that is carried in the supply system by the supply officer. An example of this is goretex. To determine requirements of this class of supply the most important factor is embarkation space available. A rough factor is 10% of all items are taken to use as replacements as Marines gear becomes unserviceable or lost.

c. Class III. Petroleum Oil and Lubricants (POL). This Class of supply is broken down into three sub-classes.

(1) Class III(A). Bulk POL for aircraft, JP-4, 5, 8.

(2) Class III(W). Bulk POL for ground equipment, MOGAS, diesel, JP.

(3) Class III(P). packaged POL, for aircraft and ground equipment, engine oil, gear oil, greases, and hydraulic fluid.

d. Class IV. Construction and barrier materials. The mission and concept of operation will determine the quantity of class IV. Planning consideration for Class IV is the embarkation space needed. Class IV requires a lot of cubic space.

e. Class V. This Class of supply is broken into two sub-classes.

(1) Class V(A) which is aviation ammunition.

(2) Class V(W) which is ground ammunition.

f. Class VI. This class is our personal demand items, or nonmilitary sales items.

g. Class VII. Major end items, Tanks, HMMWVs, complete weapons systems etc.

h. Class VIII. This is medical material to include repair parts. The battalion that holds this class of supply is Medical Bn, in the FSSG. The supplies are in AMALS for medical and ADALS for dental supplies. The battalion aid station will calculate the requirements for each of the AMALS and ADALS based on their specific purpose, i.e. sick call, surgical teams.

i. Class IX. Repair parts including components, kits, assemblies, and subassemblies (reparable and nonreparable), required for maintenance support of all equipment.

j. Class X. Material to support nonmilitary requirements and programs that are not included in class I through IX. For example, materials needed for agricultural and economic development.

2. DEFINITIONS

a. Logistical requirements are simply the resources required to effectively and efficiently support an operation. Accurately determining requirements ensures the commander has what he or she needs.

b. Planning factors are measures of consumption or usage - how much of a commodity is used in a time period or how much an item of equipment is operated in a certain time period.

c. Usage data is hard, verified information on consumption and or hours of operation in a specific unit, with a specified strength, in a specified environment. If you can find this type of information and it reasonably describes the scenario you are planning on, use that information to estimate your logistical requirements

d. Assumptions are often required and can be a significant factor in planning.

e. Sources of information: There are only 2 information sources you should use. One, the official publications we'll use during this class and, two, validated unit after action reports and SOPs. Of the two, validated unit data is marginally preferable, in some cases.

f. Derivation of Planning Factors: Use the proper rate. Class V, ammunition, is a good example. High level rates, used to plan theater requirements, are an average of consumption rates for several units. Those rates should not be used by smaller units whose requirements may be significantly greater because of greater demands due to a higher threat probability.

g. To determine a unit's logistical requirements, you need the proper information sources, you need certain pieces of information, called the Essential Elements of Friendly Information (EEFI). Most are self-evident. You must know how many troops and items of equipment, by type, that require support. You need to know the length of the operation and the general location - desert, Arctic, temperate environment. You need the commander's intent and concept of operations, to include intelligence on the enemy capability/threat, especially with respect to operations involving weapons of mass destruction. Lastly, to conduct minimal logistics supportability analyses, you need some information about the sea/land/air lines of communication. You must determine which of these elements are facts or assumptions. That affects the confidence you can assign to your effort and tells you how much safety stock you should add.

3. PROCESS

a. Here's the process you follow:

- (1) Obtain the EEI's
- (2) Get the appropriate planning factors.
- (3) Compute the requirements.

b. Develop the habit of documenting, in after action reports, command histories and EEFI's. This will be useful in developing unit SOPs that more accurately describe supply requirements that can be easily adopted in future operations.

c. A MEU is deploying to Dhahran, Saudi Arabia to participate in an exercise. The exercise length is 30 days. Unit will participate in deliberate attack, defense, NBC, casualty affairs & EPW operations. You work in the S-4. What are your supply requirements?

4. CLASS I REQUIREMENTS

a. The process used to determine Class I is,: You gather the Essential Elements of Friendly Information (EEFI), find the source data & your planning factor &, finally, calculate the requirements. For Class I, the EEFI's are the unit strength, the commander's ration policy & the days of operation. The planning factors are found in Natick Pam 30-2. Lastly, to conduct a transportation analysis, you need USMC TM 11240-15/4_, Motor Transport Technical Characteristics.

b. This is the task. You have to determine the Class I requirements for the MEU. You'll be in Kuwait on a 30 day exercise. You must compute all Class I requirements, including rations, Ration Supplement Sundries Packs(RSSP). Lastly, you have to determine how many M923 5-ton truck loads are required to transport the rations.

(1) EEI: MEU strength is 2945 pers (incl 250 female Marines).

(2) Ration policy 1: MRE-MRE-MRE for 10 days

(3) Ration policy 2: B-MRE-B for 20 days

c. This is the formula used to determine Class I requirements.

(1) Computation - Class I

* Total requirement, for each type of ration:

$$(P * D * M) / Ur = R$$

Where

P = unit strength

D = number of days

M = number of rations fed per day

Ur = number of rations per case

R = total number of cases of rations required

* Weight & cubic feet computation, for each type of ration:

$$R * Uw = W$$

$$R * Uc = C$$

Where

Where

Uw = ration case weight

Uc = ration case cuft

W = total weight of rations

C = total cuft of rations

d. Here's an example of a rate computation. We will use the 10 day ration policy of 3 MRE's per day. For ration cycle 1,

the first 10 days, the total requirement is 7363 cases of MREs. Here's how you determine that requirement:

(1) The value for P, unit strength, is 2945.

(2) The value for D, the number of days in the cycle, is 10. That's also given.

(3) The value for M, the number of rations fed per day or the ration policy, also given, is 3 MREs per day. If you multiply those 3 variables, the product is 88,350. Natick Pam, page 7 for the description of an MRE. You'll see the item weight, cube, basis of issue and a description of the ration itself. The unit of issue is 12 rations per case. The value for Ur, then, is 12.

(4) Divide 88,350 by 12 & the product is 7362.5. Round up to 7363. That's the value for R.

(5) Total weight and cubic feet are determined by multiplying the value for R, in this example 7385, by the case weight and case cube.

e. Here's the formula for Ration Supplement, Sundries Pack, Type I. Look on page 11 of the Natick Pam for data on RSSP, Type I. The unit of issue is 1 case per day for every 100 personnel.

(1) The value for P is still the unit strength. Since the unit of issue is 1 case per 100 personnel, divide P by 100.

(2) D is still the number of days, but in this example we will compute for the entire 30 days. The result is RSSP,1, the number of cases required. Once the value for RSSP,1 is known, determine total weight and cube in the same method as the MREs.

f. Here's an example of the computation for RSSP, Type I.

(1) Here's the formula for Ration Supplement, Sundries Pack, Type II. Look on page 12 of the Natick Pam for data on RSSP, Type II. The unit of issue is 1 case per 25 women for 30 days.

(a) Computation - RSSP, Type I:

* Total requirement

$$(P/100) * D = SRSSP,1$$

Where

P = unit strength

D = number of days

SRSSP,1 = cases of RSSPs, Type 1, required

* Weight & cubic feet

$$SRSSP,1 * Uw = W$$

$$SRSSP,1 * Uc = C$$

(b) The value for Pf is the number of women in the unit.

(c) Since the unit of issue is 1 case per 25 personnel, you divide Pf by 25. D is still the number of days.

(d) D is divided by 30 since 1 case is 30 days of supply.

(e) The result is RSSP,2, the number of cases required.

(f) Once you know the value for RSSP,2, you determine total weight and cube the same way you did for the MREs.

(g) By doctrine, RSSPs are not ordered unless the unit is deployed for more than 30 days. The reason is each Marine/Sailor is supposed to deploy with 30 days of these items.

g. Here's an example of a computation.

(1) The value for Pf, 250, is given.

(2) The value for D, also given, is 30.

(3) Plug in these variables & the product is 10 cases.

(4) Total weight & total cube are determined as with RSSP, Type I & MREs.

h. Practical Application

(1) Work this Practical Application. We've computed the requirements for rations policy 1. You determine the requirements for policy 2. Add that data to the requirements for policy 1 and get the total requirement, including weight &

cube. Then, determine how many M923 5-ton trucks would be required to transport the Class I requirements. Assume cross-country movement.

5. CLASS I WATER

a. Process

(1) Gather the Essential Elements of Information (EEI), find the source data and your planning factor and, finally, calculate the requirements. For water, the EEI are the unit strength, the commander's ration policy, NBC posture and threat, anticipated casualty rates, graves registration exercises, clothing/exchange/bath policy, the T/E or UER, and the days of operation. The planning factors are found in FM 101-10-1/2 (Vol 2

b. The most common uses of water are shown here.

- | | |
|---------------------|--------------------------------------|
| * Drinking | * Heat treatment |
| * Personal hygiene | * Centralized hygiene |
| * Food preparation | * Laundry |
| * Medical treatment | * Maintenance |
| * Decontamination | * Graves and Registration
(GRREG) |

c. This is the formula used to determine water requirements:

$$P * D * R = W$$

Where:

P = the unit strength in personnel or equipment

D = the number of days

R = the consumption rate (in gallons per day/event)

W = total gallons of water required

d. Example

(1) Here's an example of a rate computation. Assume there are 100 personnel in your unit. You are deploying to Alaska for 5 days.

The value for P is given as 100.

The value for D is given as 5

What's the value for R? Look in the FM 101-10-1/2, Table 2-5. What's the rate for drinking requirements? The correct answer is 2.0 GPD. You now know all the variables. Multiply the numbers and the answer is 1000 gallons for all 5 days.

e. Practical Application

(1) Work this Practical Application. This is the task. Determine the water requirements for the MEU. You'll be in Dhahran, Saudi Arabia, on a 30 day exercise. The data on the slide reflects the commander's intent. Use a blank sheet of paper and think this through. Pay attention to factors such as: which rations are you eating, how many decon exercises are you running, etc. Do the calculations for each of the requirements in the order in which they appear in the TM 101-10.

6. CLASS III REQUIREMENTS

a. Class III consists of 3 sub-classes:

(1) Class III (A): bulk POL for aircraft; AVGAS, JP-4/-5/-8.

(2) Class III (W): bulk POL for ground equipment; MOGAS, diesel, JP-x

(3) Class III (P): packaged POL for ground and/or aviation systems; engine oil, gear oil, lubricating oil, greases, and hydraulic fluid.

b. Process

(1) The process used to determine Class III requirements is exactly what I briefed in the last class. You gather the Essential Elements of Information (EEI), find the source data and your planning factor and, finally, calculate the requirements. For Class III, the EEI are the equipment density, the operational rate and the days of operation. The planning factors and operational rate are found in the TAM.

c. This is the formula used to determine Class III requirements.

Computation:

For each vehicle type, by fuel $E * D * R * H = F$

Where

E = equipment density (number of pieces of equipment in the unit)

D = number of days the equipment will be operated

R = fuel consumption rate (GPH)

H = daily operational rate (hours per day)

F = total fuel required

(1) It is applicable to Class III (W) and (A). It is also the basis for determining Class III (P) requirements.

(2) The value for E is given by the T/E or UER.

(3) The value for D is in the OPORD/OPLAN.

(4) The values for R and H are found in the TAM. The value for H can be different than that given in the TAM. If you have no other information, however, use the operational rates given in the TAM.

(5) The solution is the value for F.

d. Examples

(1) Here's an example of a Class III (W) requirement computation for a M151:

(a) The value for E, equipment density, is 10.

(b) The value for D, the number of days in the operation, is 30

(c) The value for R, the fuel consumption rate, 1.5 gallons per hour (GPH), is found in the TAM, page G07.

(d) The value for H, 8 hours of operation per day, is found in the TAM, page G07.

(2) If you multiply those 4 variables, the product, and the value for F, is 3600 gallons of fuel, in this case, diesel.

e. Practical Application

(1) Work this Practical Application. Determine the fuel requirements for these end items. Use the equipment density

given in the UER. Assume the operational rates given in the TAM.

f. Example

(1) Here's an example: From the prior computation, the MK48s require 39984 gals of diesel. Lubricating oil, gear requirements are 0.5% of fuel requirements. 39984 times .005 equals 200 gals of lubricating oil.

g. Next, you need to determine the lubricating oil, internal combustion, by grade. The oil is supplied in 3 SAE grades, SAE 10, SAE 30 & SAE 50. The distribution varies by external temperature range.

h. To determine the break down of oil grades. The MK48s require a total of 1400 gallons of lubricating oil, internal combustion. The temperature in Kuwait will be above 32 degree so SAE 30 is 65% of the oil. Multiply 1400 by .65 & the answer is 910 gallons of SAE 30 oil.

i. There are several pieces of equipment used to store, transport and distribute POL. Look at the 2 that you are most likely to use - the SIXCON and the collapsible fabric drum.

(1) Open TM 11275-15/3C, Principal Characteristics of Marine Corps Engineer Equipment.

(2) The SIXCON is a 900 gallon capacity rigid metal tank. 5 of the Modules can be combined with a Pump Module (see page 2-100) in an ISO 8x8x20 container equivalent with a total capacity of 4500 gallons of POL. The SIXCON is transportable by all modes except air-drop. Now, turn to page 2-52 to see the drum. The fabric drum, commonly referred to as a bladder that has a 500 gallon capacity

7. CLASS V(W) REQUIREMENTS FOR COMBAT

a. Combat Planning Factors (CPF). Combat Planning Factors reflect the anticipated expenditure of ground ammunition over designated time periods of combat operations. The CPF's listed in the enclosures reflect unconstrained requirements based upon the approved force structure, weapon mix, anticipated duration of combat, and the anticipated intensity of conflict.

(1) Enclosure (2) of MCO 8010.1E lists CPF'S for an infantry heavy threat. A scenario description of an infantry heavy threat is described in the enclosure.

(2) Enclosure (3) of MCO 8010.1E lists CPF'S for an armor heavy threat. A scenario description of an armor heavy threat is described in the enclosure.

(3) Enclosure (4) of MCO 8010.1E lists composite CPF'S. CPF'S in this enclosure are not scenario based. They are weighted averages of the scenario based tables. This enclosure is useful for planning operations in an uncertain environment.

(4) Enclosure (5) lists CPF'S for MEU(SOC) units, and are consolidated as bulk quantities per MEU(SOC). This enclosure is not additive to the other enclosures.

b. Enclosure format. Within each enclosure they are broken down two ways.

(1) The first table in the enclosure lists the CPF'S in weapon system/platform weapon identifier (ID) sequence.

(2) The second table in the enclosure lists the CPF's in DODIC sequence.

(3) CPF's of artillery projectile ancillary items are included in each enclosure. Multipliers for calculating the numbers of ancillary items required for different quantities of projectiles are shown in the artillery ancillary items table.

c. Column Descriptions

(1) Weapon

(a) Weapon ID. Identifies the weapon system/platform upon which the rates are based. The weapon ID is normally the TAMCN, but may include other descriptions (ie. MARDV, INDIV, etc).

(b) Nomenclature. Identifies the weapon system upon which the rates are based.

(2) Ammunition

(a) DODIC. Identifies by DODIC the applicable ammunition item.

(b) Nomenclature. Identifies, by standard nomenclature, the applicable ammunition item.

(3) GCE Rates. The Daily Assault Rate, Daily Sustaining Rate, and Basic Allowance are shown for weapons/individuals in the Ground Combat Element.

(a) Daily Assault. The rate is shown as the number of rounds per day per weapon in the GCE during the assault (intense) phase of combat.

(b) Daily Sustain. The rate is shown as the number of rounds per day per weapon in the GCE during the sustaining phase of combat.

(c) Basic Allowance. Indicates the basic allowance (BA) of the ammunition item recommended to be carried within the means normally expected to be available

to an FMF unit embarking and debarking for combat operations. The (BA) are provided only as guides and are not directive or additive to the planning rates.

(4) Other-than GCE Rates. The Daily Assault Rate, Daily Sustaining Rate, and Basic Allowance are shown for weapons in the Command Element (CE), Aviation Combat Element (ACE), and Combat Service Support Element (CSSE).

(a) Daily Assault. The rate is shown as the number of rounds per day per weapon in the CE, ACE, and CSSE during the assault (intense) phase of combat.

(b) Daily Sustain. The rate is shown as the number of rounds per day per weapon in the CE, ACE, and CSSE during the sustaining phase of combat.

(c) Basic Allowance. Indicates the basic allowance (BA) of the ammunition item recommended to be carried within the means normally expected to be available to an FMF unit embarking and debarking for combat operations. The (BA) are provided only as guides and are not directive or additive to the planning rates.

(5) Artillery Ancillary Items

(a) Projectile DODIC. Identifies, by DODIC, the artillery projectile for which the ancillary items are required.

(b) Projectile Nomenclature. Identifies, by standard nomenclature, the artillery projectile for which the ancillary items are required.

(c) Ancillary Item DODIC. Identifies, by DODIC, an ancillary item that should be associated with the projectile identified.

(d) Ancillary Item Nomenclature. Identifies, by standard nomenclature, an ancillary item that should be associated with the projectile identified. Suitable substitutes for each ancillary item are shown in parentheses.

(e) Ancillary Item Multiplier. Indicates the number of rounds of the ancillary item that should be provided for each round of the projectile identified. To determine the total required quantities of the ancillary item multiply the projectile quantity by the MULTIPLIER in this column.

c. Computation of Requirements For each Weapon ID the formula is:

$$E * R * D = F$$

where: E = equipment density
R = firing rate
D = number of days at a particular rate
F = total rounds required, by DODIC

d. Hints.

ask yourself....

- what is the threat? (enclosure)
- have I been given a DODIC or a weapon? (table)
- what type of unit is this? (column)
- what rates do I have to figure out? (column)
- assault?...sustained?...both? (column)
- how many types of ammo go with this wpn? (r)
- any ancillary items? (table 3?)

e. Example 1: You are in 1st Bn, 8th Mar. You have 29 E0993's (7.62mm M240G machine guns). You will be facing an infantry heavy threat. Calculate the assault rate for 3 days of operating.

E = 29 (29 M240Gs)
 R = 70.04825 (Enclosure 2 pg 4)
 D = 3
 F = 29 * 70.04825 * 3 = 6094.1976 rounds or 6095

f. Example 2: You are with MSSG 31. You have 2 E1065 (60MM Mortar's) for rear area security. You will be facing an unknown threat. Calculate the sustained rate for 15 days of operations.

E = 2 (2 60mm mortars)
 R = .58660 (Enclosure 4, pg 6, HE w/MOF)
 R = 1.36874 (HE, w/FZ)
 R = 2.46538 (Smoke, WP)
 R = .36725 (Illumine)
 D = 15
 F = 2 * .58660 * 15 = 17.598 = 18 HE w/MOF
 2 * 1.36874 * 15 = 41.0622 = 42 HE, w/FZPD
 2 * 2.46538 * 15 = 76.6665 = 74 Smoke, WP
 2 * .36725 * 15 = 11.0175 = 12 Illumine

g. Example 3: You are in 2nd Bn 4th Mar. You have 8 E0665 (M198 155 mm Towed Howitzer's). You will be facing an armor heavy threat. Calculate the sustained rate for 15 days of operations for DODIC D563 and its ancillary items.

E = 8 (8 M 198's)
 R = .64947 ((Enclosure 3, pg 14, D563)
 D = 15
 F = 8 * .64947 * 15 = 77.9364 = 78 rounds HE

DPICM.

D003 = 78 * .1 = 7.1 = 8 spotting charges
 D533 = 78 * .27 = 21.09 = 22 white/red bags
 D540 = 78 * .15 = 11.7 = 12 green bags
 D541 = 78 * .68 = 53.04 = 54 white bags
 N289 = 78 * 1.05 = 81.9 = 82 fuses
 N523 = 78 * 1.1 = 85.8 = 86 primers

(1) Information. You are in the S-4 section for BLT 1/5. You are preparing to deploy with 11th MEU(SOC). The Division ammo officer has asked for your class V(W) requirements for a 15 day operation (3 days assault intensive and 12 days sustained operations). Utilizing your Unit Equipment Report (UER) and the MEU Force List, calculate the number of rounds for the following weapon systems E0892 (grenade launcher), E0935 (Tow), E0942 (LAV-AT), E0665 (M198), the following hand grenades DODIC G881, G900, and L307, and DODIC M032 (1 lb TNT).

REFERENCES

1. FM 101-10-1/2, Staff Officer's Field Manual
2. Joint Pub 1-02, DOD Dictionary of Military and Associated Terms
3. NAVMC 1017, Table of Authorized Materiel (TAM)
4. MCO 8010.1E, Class V (W) Planning Factors for Fleet Marine Force Combat Operations
5. TM 11275-15/3, Principle Technical Characteristics of USMC Engineer Equipment
6. TM 11240-15/4, Motor Transport Characteristics Manual

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STUDENT HANDOUT

PRACTICAL APPLICATION

CLASS V(W) REQUIREMENTS FOR COMBAT

1. **Information.** You are the S-4 for BLT 1/5. You are preparing to deploy with 11th MEU(SOC). The Division ammo officer has asked for your class V(W) requirements for a 15 day operation (3 days assault intensive and 12 days sustained operations). Utilizing your Unit Equipment Report (UER) and the MEU Force List, calculate the number of rounds for the following weapon systems E0892 (grenade launcher), E0935 (Tow), E0942 (LAV-AT), E0665 (M198), the following hand grenades DODIC G881, G900, and L307.

a. E0892 (DODICS: B504, B505, B506, B508, B509, B535, B546)

(1) Number of weapons _____

(2) Number of days assault intense rate: _____

(3) Firing Rate (by DODIC) assault intense:

(4) Number of days sustained rate: _____

(5) Firing Rate (by DODIC) sustained rate:

(6) Number of rounds by DODIC:

(a) B504 _____ (e) B509 _____

(b) B505 _____ (f) B535 _____

(c) B506 _____ (g) B546 _____

(d) B508 _____

b. E0935

(1) Number of weapons _____

(2) Firing Rate (by DODIC):

(3) Number of days assault intense rate: _____

(4) Number of days sustained rate: _____

(5) Number of rounds by DODIC:

(a) PV18 _____

(b) PV47 _____

c. E0942

d. E0665 (DODIC: D544 and ancillary items only)

(1) Number of rounds and ancillary items by DODIC:

(a) D544 _____ (e) N290 _____

(b) D533 _____ (f) N291 _____

(c) D540 _____ (g) N340 _____

(d) D541 _____ (h) N523 _____

(i) N659

e. DODIC G881

(1) Number of personnel: _____

(2) Number of days assault intense rate: _____

(3) Firing Rate (by DODIC) assault intense: _____

(4) Number of days sustained rate: _____

(5) Firing Rate (by DODIC) sustained rate: _____

(6) Total number of G881 required: _____

f. DODIC G900

(1) Number of personnel: _____

(2) Number of days assault intense rate: _____

(3) Firing Rate (by DODIC) assault intense: _____

(4) Number of days sustained rate: _____

(5) Firing Rate (by DODIC) sustained rate: _____

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PRACTICAL APPLICATION SOLUTION

CLASS V(W) REQUIREMENTS FOR COMBAT

1. **Information.** You are the S-4 for BLT 1/5. You are preparing to deploy with 11th MEU(SOC). The Division ammo officer has asked for your class V(W) requirements for a 15 day operation (3 days assault intensive and 12 days sustained operations). Utilizing your Unit Equipment Report (UER) and the MEU Force List, calculate the number of rounds for the following weapon systems E0892 (grenade launcher), E0935 (Tow), E0942 (LAV-AT), E0665 (M198), the following hand grenades DODIC G881, G900, and L307, and DODIC M032 (1 lb TNT).

a. E0892 (DODICS: B504, B505, B506, B508, B509, B535, B546)

- (1) Number of weapons: 127 (UER)
- (2) Number of days assault intense rate: 3
- (3) Firing Rate (by DODIC) assault intense:
B504: .39732; B505: .39732; B506: .19534;
B508: .19534; B509: .19534; B535: .48272;
B546: 1.02964
- (4) Number of days sustained rate: 12
- (5) Firing Rate (by DODIC) sustained rate:
B504: .01498; B505: .01498; B506: .02479;
B508: .02479; B509: .02479; B535: .02271;
B546: 1.14233

$$\underline{\text{B504:}} \quad 127 * 3 * .39732 + 127 * 12 * .01498 =$$

$$151.37892 \quad + \quad 22.82952 \quad = 174.20844 = 175$$

$$\underline{\text{B505:}} \quad 127 * 3 * .39732 + 127 * 12 * .01498 =$$

$$151.37892 \quad + \quad 22.82952 \quad = 174.20844 = 175$$

$$\underline{\text{B506:}} \quad 127 * 3 * .19534 + 127 * 12 * .02479 =$$

$$74.42454 \quad + \quad 37.77996 \quad = 112.2045 = 113$$

$$\underline{\text{B508:}} \quad 127 * 3 * .19534 + 127 * 12 * .02479 =$$

$$74.42454 \quad + \quad 37.77996 \quad = 112.2045 = 113$$

$$\underline{\text{B509:}} \quad 127 * 3 * .19534 + 127 * 12 * .02479 =$$

$$74.42454 \quad + \quad 37.77996 \quad = 112.2045 = 113$$

$$\underline{\text{B535:}} \quad 127 * 3 * .48272 + 127 * 12 * .02271 =$$

$$183.91632 \quad + \quad 34.61004 \quad = 218.52636 = 219$$

$$\underline{\text{B546:}} \quad 127 * 3 * 1.02964 + 127 * 12 * 1.14233 =$$

$$392.29284 \quad + \quad 1740.9109 \quad = 2133.2037 = 2134$$

- (6) Number of rounds by DODIC:
(a) B504 175 (e) B509 113

(b) B505 175 (f) B535 219
 (c) B506 113 (g) B546 2134
 (d) B508 113

b. E0935

(1) Number of weapons 16

(2) Firing Rate (by DODIC)
PV18 .10114/.01880; PV47 .40455/.07522

(3) Number of days assault intense rate: 3

(4) Number of days sustained rate: 12

$$\begin{aligned} \text{PV18: } 16 * 3 * .10114 + 16 * 12 * .01880 &= \\ 4.85472 + 3.6096 &= 8.46432 = 9 \end{aligned}$$

$$\begin{aligned} \text{PV47: } 16 * 3 * .40455 + 16 * 12 * .07522 &= \\ 19.4184 + 14.44224 &= 33.86064 = 34 \end{aligned}$$

(5) Number of rounds by DODIC:

(a) PV18 9

(b) PV47 34

c. E0942

NUMBER OF WEAPONS: 2
 NUMBER OF DAYS ASSAULT INTENSE RATE: 3
 FIRING RATE ASSAULT INTENSE:
A131: 30.53096; G826: 1.80745;
PV18: .20132; PV 47: .03708

NUMBER OF DAYS SUSTAINED RATE: 12

FIRING RATE SUSTAINED:
A131: 22.04019; G826: .76533;
PV18: .80527; PV 47: .14831

$$\begin{aligned} \text{A131: } 2 * 3 * 30.53096 + 2 * 12 * 22.04019 &= \\ 183.18576 + 528.96456 &= 712.15032 = 713 \end{aligned}$$

$$\begin{aligned} \text{G826: } 2 * 3 * 1.80745 + 2 * 12 * .76533 &= \\ 10.8447 + 18.36792 &= 29.21262 = 30 \end{aligned}$$

$$\underline{\text{PV18}}: 2 * 3 * .20132 + 2 * 12 * .03708 = \\ 1.20792 + .088992 = 2.09784 = 3$$

$$\underline{\text{PV47}}: 2 * 3 * .80527 + 2 * 12 * .14831 = \\ 4.83162 + 3.55944 = 8.39106 = 9$$

d. E0665 (DODIC: D544 and ancillary items only)

NUMBER OF WEAPONS: 6
 NUMBER OF DAYS ASSAULT INTENSE RATE: 3
 FIRING RATE ASSAULT INTENSE: 9.95307

NUMBER OF DAYS SUSTAINED RATE: 12

FIRING RATE SUSTAINED: 2.69852

$$\underline{\text{D544}}: 6 * 3 * 9.95307 + 6 * 12 * 2.69852 = \\ 179.15526 + 194.29344 = 373.4487 = 374$$

$$\underline{\text{D533}}: 374 * .27 = \underline{100.98} = \underline{101}$$

$$\underline{\text{D540}}: 374 * .15 = \underline{56.1} = \underline{57}$$

$$\underline{\text{D541}}: 374 * .68 = \underline{254.32} = \underline{255}$$

$$\underline{\text{N290}}: 374 * .05 = \underline{18.7} = \underline{19}$$

$$\underline{\text{N291}}: 374 * .25 = \underline{93.5} = \underline{94}$$

$$\underline{\text{N340}}: 374 * .75 = \underline{280.5} = \underline{281}$$

$$\underline{\text{N523}}: 374 * 1.1 = \underline{411.4} = \underline{412}$$

$$\underline{\text{N659}}: 374 * .02 = \underline{7.48} = \underline{8}$$

(1) Number of rounds and ancillary items by DODIC:

(a) D544 374 (e) N290 19

(b) D533 101 (f) N291 94

(c) D540 57 (g) N340 281

(d) D541 255 (h) N523 412

(i) N659 8

e. DODIC G881

(1) Number of personnel: 1470

(2) Number of days assault intense rate: 3

(3) Firing Rate (by DODIC) assault intense: .05018

(4) Number of days sustained rate: 12

(5) Firing Rate (by DODIC) sustained rate: .04079

$$\begin{aligned} \underline{\text{G881}}: & \quad 1470 * 3 * .05018 + 1470 * 12 * .04079 = \\ & \quad 221.2938 \quad + \quad 719.5356 \quad = 940.8294 = 941 \end{aligned}$$

(6) Total number of G881 required: 941

f. DODIC G900

(1) Number of personnel: 1470

(2) Number of days assault intense rate: 3

(3) Firing Rate (by DODIC) assault intense: .00064

(4) Number of days sustained rate: 12

(5) Firing Rate (by DODIC) sustained rate: .00031

$$\begin{aligned} \underline{\text{G900}}: & \quad 1470 * 3 * .00064 + 1470 * 12 * .00031 = \\ & \quad 2.8224 \quad + \quad 5.4684 \quad = 8.2908 = 9 \end{aligned}$$

(6) Total number of G900 required: 9