
U.S. MARINE CORPS TECHNICAL MANUAL

TACTICAL ENGINEER EQUIPMENT LICENSING
EXAMINER'S MANUAL



W/CHANGES 1 THRU 3 INCORPORATED

CHANGES HAVE BEEN INCORPORATED
AND ARE DENOTED BY A BAR (1) SYMBOL

JUNE 1983

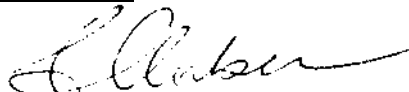
DEPARTMENT OF THE NAVY
Headquarters, U.S. Marine Corps
Washington, D.C. 20380

30 June 1983

1. This Manual is effective upon receipt and provides standard operating procedures for qualifying, testing, and licensing tactical engineer equipment operators.
2. Notice of discrepancies and suggested changes should be forwarded on NAVMC 10772 to the Commandant of the Marine Corps (LMA-1), Washington, D.C. 20380:

BY DIRECTION OF THE COMMANDANT OF THE MARINE CORPS

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DEPARTMENT OF THE NAVY
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Washington, DC 20380-0001

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2. Action. Make the following change:

APPENDIX A

PAGE

ACTION

A-4

Under column heading TAMCN, ITEM 2. (h), change "B0465" to read "B1291".

3. Filing Instructions. This change transmittal page will be filed immediately following the signature page of the basic manual.

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For ITEM 2. delete entry "(i)" in its entirety.

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1. Purpose. To direct pen changes to the basic Manual.
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 - a. Page D-39, Question 21,b change “(SP-4)” to “(JP-4)”.
 - b. Page D-41/(D-42 blank) add “,a” to Correct Response 21.

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TABLE OF CONTENTS

<u>CHAPTER</u>		<u>PAGE</u>
1.	INTRODUCTION	1-1
1-1.	PURPOSE	1-1
1-2.	SCOPE	1-1
1-3.	APPLICABILITY	1-1
1-4.	LICENSING EXAMINER	1-1
	a. Qualifications of the Examiner	1-1
	b. Pertinent Licensing Data/Materials	1-2
1-5.	LICENSING OFFICER	1-2
1-6.	ORGANIZATION OF MANUAL	1-2
	a. Chapter 1, Introduction	1-2
	b. Chapter 2, Recordkeeping	1-2
	c. Chapter 3, Application for Licensing	1-2
	d. Chapter 4, Physical Requirements	1-2
	e. Chapter 5, Equipment Knowledge/Awareness	1-2
	f. Chapter 6, Skill Performance	1-3
	g. Chapter 7, Civilian Applicants	1-3
	h. Chapter 8, Procedures for Issuing Licenses	1-3
	i. Chapter 9, Remedial Procedures	1-3
2.	RECORDKEEPING	2-1
2-1.	GENERAL	2-1
2-2.	ADMINISTRATIVE FILES AND TRANSACTION RECORDS	2-1
	a. Tactical Engineer Equipment Operator History File	2-1
	b. Action Date File	2-1
	c. License Log Book	2-2
3.	APPLICATION FOR LICENSING	3-1
3-1.	BACKGROUND	3-1
3-2.	GENERAL	3-1
3-3.	COMPLETING THE APPLICATION, PART I	3-1
	a. All Applicants (Items I through 11)	3-1
	b. Military Applicants for Duplicate License	3-1

<u>CHAPTER</u>		<u>PAGE</u>
3-4.	SPECIAL REQUIREMENTS: RESERVISTS, RECRUITERS, PERSONNEL ON INDEPENDENT DUTY	3-1
3-5.	ADMINISTRATIVE AND TESTING REQUIREMENTS (BY TYPE OF TRANSACTION)	3-3
	a. initial Licenses and Renewals	3-3
	b. Duplicate Issues	3-3
	c. Upgraded Licenses	3-3
3-6.	RECORDING ACTION	3-3
4.	PHYSICAL REQUIREMENTS	4-1
4-1.	GENERAL	4-1
4-2.	SCREENING STANDARDS	4-1
	a. Vision	4-1
	b. Height and Weight	4-3
	c. Hearing	4-3
	d. Age	4-3
	e. Other Restrictions	4-3
4-3.	OBTAINING APPLICABLE MEDICAL INFORMATION ON THE APPLICANT	4-3
4-4.	MEDICAL EVALUATION REFERRAL PROCEDURE	4-3
4-5.	RECORDING ACTION	4-3
5.	EQUIPMENT KNOWLEDGE/AWARENESS	5-1
5-1.	GENERAL	5-1
	a. All Major Components	5-1
	b. Operator's Manual and Lubrication Order	5-1
	c. Preventive Maintenance Service	5-1
	d. Safety Precautions	5-1
5-2.	WRITTEN/ORAL TEST	5-1
5-3.	PROCEDURES OF TEST ADMINISTRATION	5-1
	a. Testing Environment	5-1
	b. Taking the Test	5-1
	c. Testing the Applicant with Limited English Language Capability	5-2

<u>CHAPTER</u>	<u>PAGE</u>
d. Testing Groups of Applicants	5-2
e. Retesting Applicants	5-2
f. Scoring the Tests	5-2
5-4. NOTIFYING UNSUCCESSFUL APPLICANTS	5-2
5-5. RECORDING ACTION	5-2
6. SKILL PERFORMANCE	6-1
6-1. APPLICABILITY	6-1
6-2. TRAINING	6-1
a. Subject Areas	6-1
b. Training Methods	6-2
6-3. PROCEDURES OF TEST ADMINISTRATION	6-3
a. Testing Environment	6-3
b. Scheduling the Test	6-3
c. Taking the Test	6-3
d. Termination of a Skill Performance Test	6-3
e. Test Evaluation	6-4
f. Retesting Unsuccessful Applicants	6-4
g. Unique Requirements	6-4
6-4. NOTIFICATION TO UNSUCCESSFUL APPLICANTS	6-4
6-5. RECORDING ACTION	6-4
7. CIVILIAN APPLICANTS	7-1
7-1. GENERAL	7-1
a. Civil Service Employee	7-1
b. Non-Civil Service Employee	7-1
c. Primary Operator	7-1
d. Incidental Operator	7-1
7-2. PHYSICAL REQUIREMENTS FOR CIVILIANS	7-1
a. All Civilians	7-1
b. Non-Civil Service Employees Only	7-2
c. Civil Service Employees	7-2

<u>CHAPTER</u>		<u>PAGE</u>
7-3.	MEDICAL REFERRAL PROCEDURES	7-2
	a. Epilepsy	7-2
	b. All Other Conditions	7-2
7-4.	ISSUING PROCEDURES (CIVIL SERVICE EMPLOYEES ONLY)	7-2
	a. Primary Operator Requirements	7-2
	b. Incidental Operator Requirements	7-2
7-5.	ISSUING PROCEDURES (NON-CIVIL SERVICE EMPLOYEES)	7-5
7-6.	RENEWAL, DUPLICATE, AND UPGRADED ISSUES	7-5
	a. Renewal	7-5
	b. Duplicate	7-5
	c. Upgrade	7-5
7-7.	NOTIFICATION AND RECORDS	7-5
8.	PROCEDURES FOR ISSUING LICENSES	8-1
8-1.	GENERAL	8-1
8-2.	COMPLETING THE DOCUMENTATION	8-1
	a. Completing the Application, Parts II and 111	8-1
	b. Government Vehicle Operator's Permit, SF-46	8-4
	c. Action Date Card	8-4
8-3.	DISQUALIFICATION	8-7
	a. Double-Check the Requirements	8-7
	b. Denial Because of Failure of Physical Examination	8-7
	c. Denial Because of Failure of Equipment Knowledge/ Awareness Test	8-7
	d. Denial Because of Failure of Skill Performance Test	8-7
	e. Denial Because of Recklessness, Attitude, Accident, Etc.	8-7
8-4.	NOTIFICATION ACTION	8-7
8-5.	RECORDING ACTION	8-7

<u>CHAPTER</u>	<u>PAGE</u>
9. REMEDIAL PROCEDURES	9-1
9-1. GENERAL	9-1
9-2. REVOCATION	9-1
9-3. SUSPENSION	9-1
9-4. RECORDING ACTION	9-1
a. Action Date Card	9-1
b. Tactical Engineer Equipment Operator History File	9-1
c. SRB/OQR Entry	9-1

APPENDICES

A. TACTICAL ENGINEER EQUIPMENT REQUIRING A LICENSE	A-1
B. REFERENCE DOCUMENTS	B-1
c. BLANK FORMS	C-1
D. REPRESENTATIVE WRITTEN EQUIPMENT KNOWLEDGE	
(AWARENESS/SAFETY) TESTS	D-1
Bath Unit, Trailer-Mounted	D-3
Boat, Bridge Erection	D-9
Compressor, Rotary	D-15
Crane, Rough Terrain, Hydraulic, 30 Ton	D-21
Crane, Wheel-Mounted, Self-Propelled, 71/2 Ton	D-27
Decontaminating Apparatus, Power-Driven, Skid Mounted	D-35
Floodlight Set, Electric, Trailer Mounted	D-43
Generator Set, 30kW, 60 Hz/400Hz	D-49
Generator Set, 100kW, 60Hz	D-57
Grader, Road, Motorized	D-63
Saw, Chain, One-Man Portable	D-69
Saws, Radial, Overarm	D-73
Scraper, Earthmoving, Towed	D-81
Tractor, Medium Full-Track, TEREX 82-30M	D-87
Tractor, Full-Track With MultiPurpose Bucket	D-93
Tractor, Rubber-Tired, Articulated Steer	D-101
Truck, Forklift, Rough Terrain, MC 4000	D-107

	<u>PAGE</u>
Reverse Osmosis Water Purification Unit	D-115
Water Purification Equipment Set, Mobile	D-121
Distillation Unit, Water	D-127
E. REPRESENTATIVE SKILL PERFORMANCE TESTS	E-1
Applicants Skill Performance Test Instructions	E-2
Bath Unit, Trailer-Mounted	E-3
Boat, Bridge Erection	E-5
Compressor, Air Rotary, 250 CFM	E-7
Crane, Rough Terrain, Hydraulic, 30 Ton	E-9
Crane, Wheel-Mounted, Self-Propelled, 7 1/2 Ton	E-13
Decontaminating Apparatus	E-15
Generator Set, 30kW, 60Hz	E-19
Generator Set, 100kW, 60Hz	E-21
Saw, Chain, One-Man Portable	E-23
Saws, Radial, Overarm	E-25
Scraper, Earthmoving, Towed	E-29
Tractor, Medium, Full-Track, TEREX 82-30M	E-31
Tractor, Full-Track with MultiPurpose Bucket	E-33
Truck, Forklift, Rough Terrain, MC 4000	E-35
Water Purification Unit, Frame-Mounted	E-37
Distillation Unit, Water	E-41

LIST OF FIGURES

	<u>PAGE</u>
3-1. Front Page of Application for Tactical Engineer Equipment Operator's License	3-2
4-1. Request for Medical Information	4-4
4-2. Medical Evaluation Referral Memorandum	4-3
7-1. Front Page of SF-217, Medical Report (Epilepsy)	7-3
7-2. Back Page of SF-217, Medical Report (Epilepsy)	7-4
8-1. Back Page of Application for Tactical Engineer Equipment Operator's License	8-2
8-2. Sample SRB/OQR Entry	8-3
8-3. SF-46 (U .S. Government Motor Vehicle Operator's Identification Card)	8-5
8-4. Additional SF-46 (U .S. Government Motor Vehicle Operator's identification Card) - Continuation	8-6

LIST OF TABLES

4-1. Physical Standards Required for Operators of Tactical Engineer Equipment	4-2
8-1. Requirements Not Met	8-8

CHAPTER 1 INTRODUCTION

1-1. PURPOSE. This manual provides standard Marine Corps operating procedures for qualifying, testing, and licensing tactical engineer equipment operators. Implementation of its provisions will enhance selection and certification of qualified engineer equipment operators, an essential element of safe and efficient engineer equipment operations.

A listing of tactical engineer equipment requiring licensed operators is provided in Appendix A. If additional types of equipment for which licensing is required are introduced at a later date, applicable changes will be incorporated in this manual. Other items of tactical engineer equipment do not require an operator's license; however, the operators must be fully qualified/trained to operate and maintain those items. A listing of selected items of tactical engineer equipment not requiring a licensed operator but requiring operator training is also provided in Appendix A. Additionally, Appendix A includes a listing of tactical engineer equipment for which licensing is recommended if operated by non-formal school trained personnel.

1-2. SCOPE. The standards and procedures set forth in this manual apply to all testing and issuance requirements for an operator's/mechanic's license for tactical engineer equipment. These procedures shall be observed and followed by all personnel administering licensing programs.

1-3. APPLICABILITY. All Marine Corps personnel (Regular and Reserve) and all civilian personnel, who are or may be assigned to part-time or full-time duties involving the operation of the tactical engineer equipment listed in Appendix A, shall be licensed in accordance with this publication before being permitted to operate such equipment. The operator's license and mechanic's license are the types of licenses to be issued. The operator's license will be issued to all personnel employed as regular, part-time, or additional duty operators upon completion of prescribed tests and attainment of qualifications contained within this technical manual. The mechanic's license will be issued to all maintenance personnel whose assigned duties require them to move and/or operate items of tactical engineer equipment within close proximity of the tactical equipment pool. Every operator of a Government-owned or controlled piece of equipment shall have in their possession a valid U.S. Government Motor Vehicle Operator's Identification Card (SF-46), as defined by this technical manual, while operating the equipment. Unless otherwise specified, the license will be valid for a period of 3 years. Officers will be restricted from operating tactical engineer equipment unless absolutely essential for mission accomplishment. When it is determined that an officer is required to be licensed and to operate tactical engineer equipment, this authorization will be reflected in the Officer's Qualification Record (OQR) and shall be automatically rescinded upon termination of such duty or when transferred. The requirement for licensing of tactical engineer equipment operators shall be complied with no later than 6 months from the date of this publication for personnel already operating tactical engineer equipment.

1-4. LICENSING EXAMINER. The value of a licensing examination will depend largely on the competence of the examiner. Examiners should have a thorough knowledge of equipment operating techniques and test administration and be checked periodically to ensure the consistency of their test evaluations. The licensing examiners shall be designated in writing by Unit Commanders, as an additional duty.

a. Qualifications of the Examiner. The following factors apply to the designation of an examiner qualified to evaluate written tests (or administer and evaluate the oral

version of written tests for license applicants with limited English language capability) and to administer and evaluate performance qualification tests for specific types of engineer equipment.

(1) Operating Qualifications. The examiner should be a fully qualified licensed tactical engineer equipment operator with supervisory status.

(2) Training and Certification. The examiner should be trained by qualified instructors. He should be trained in the administration and evaluation of the various examination and test procedures included in the tactical engineer equipment operator's/mechanic's testing and licensing program.

b. Pertinent Licensing Data/Materials. In order for Licensing Examiners to perform the licensing procedures effectively, they must have access to, or maintain within their files/office, the following data/equipment:

(1) Reference Documents. The documents listed in Appendix B are either related to, or actually used during, the licensing process. The appropriate reference documents, available through normal Marine Corps channels, make up the minimum basic library required in, or readily available to each licensing office.

(2) Blank Forms. The administrative forms contained in Appendix C may be copied and used during licensing if they are not available through normal supply channels. Forms obtained through normal supply channels should be used when possible.

1-5. LICENSING OFFICER. Licensing Officers shall be designated in writing, as an additional duty, by Unit Commanders. Licensing Officers should be knowledgeable in the operation of all tactical engineer equipment for which they are responsible. They will have access to and responsibility for the items of tactical engineer equipment to be licensed. The Licensing Officer ensures Part 111 of the Application for Tactical Engineer Equipment Operator's License has been completed and signs this form. They also ensure all data has been transcribed on the SF-46 and sign this form, too.

1-6. ORGANIZATION OF MANUAL. For ease of reading and locating information, the manual has been organized into the following chapters.

a. Chapter 1, Introduction.

b. Chapter 2, Recordkeeping. This chapter discusses the administrative files and transaction records.

c. Chapter 3, Application for Licensing. Chapter 3 provides a discussion on how to complete the front page of the application (instructions for completion of the back page are provided in Chapter 8); information concerning special requirements relating to reservists, recruiters, and personnel on independent duty; administrative and testing requirements and recording action.

d. Chapter 4, Physical Requirements. This chapter discusses screening standards, obtaining applicable medical information on the applicant, medical evaluation referral procedures, and recording action.

e. Chapter 5, Equipment Knowledge/Awareness. A discussion of general knowledge tests, procedures of test administration, scoring the tests, and of the recording action is provided in this chapter.

f. Chapter 6, Skill Performance. This chapter discusses general skill performance tests, principles of testing, and recording action.

g. Chapter 7, Civilian Applicants. This chapter discusses general requirements, physical requirements, medical referral procedures, issuing procedures for civil service and non-civil service civilian employees, renewal, duplicate, and upgraded issues, and notifications and records.

h. Chapter 8, Procedures for Issuing Licenses. A discussion on how to complete the documentation, poor performance or disqualification, notification actions, and recording action is provided in this chapter.

i. Chapter 9, Remedial Procedures. Revocations, suspensions, notification procedures, and recording action are covered in this chapter.

CHAPTER 2 RECORDKEEPING

2-1. GENERAL. The complexity of administrative recordkeeping techniques/procedures will vary with the activity level of the office. As more licensing transactions are handled and more Licensing Examiners are required, recordkeeping becomes more complex. Because of this, there is no single recordkeeping procedure to follow; however, procedures instituted by the Unit will include the following mandatory administrative files and transaction records:

- a. Tactical Engineer Equipment Operator History File 1/
- b. Action Date File
- c. License Log Book.

The following are suggested techniques/procedures which may be modified as needed.

2-2. ADMINISTRATIVE FILES AND TRANSACTION RECORDS. Two filing systems, the Tactical Engineer Equipment Operator History File and the Action Date File, and one transaction record (License Log Book) should be adequate for efficient management of the tactical engineer equipment licensing program. The Tactical Engineer Equipment Operator History File will be organized alphabetically by last name of applicants. The Action Date File will be organized by date when action is required.

a. Tactical Engineer Equipment Operator History File. This file will contain all documentation on active tactical engineer equipment Standard Form 46 (SF-46) (U.S. Government Motor Vehicle Operator's Identification Card) holders and applicants. A filing cabinet or adequate desk drawer space will be needed to maintain a folder on each applicant. The file should be organized alphabetically. The applicant's folder will contain, in chronological order, the following information:

- (1) Applicant's application for licensing
- (2) Licensing Examiner's interview notes
- (3) Applicant's tests (equipment knowledge and skill performance)
- (4) Documentation of any special action taken
- (5) Applicable Copies of Notification and Letters

Folders will be retained for 3 years following the last date of entry. The date of the next required action is entered on the front cover of each Tactical Engineer Equipment Operator History File. Upon leaving the unit, individuals will take their Tactical Engineer Equipment Operator History File with them to the receiving unit.

b. Action Date File. This file, which consists of 3x5 note cards, is organized by week of the year (1 through 52). Each card contains a list of applicants whose tactical engineer equipment SF-46 indicates a required action during that week. During the first week of each month, the Licensing Examiners remove the action date cards for the following calendar month. They then develop and submit to the Unit Commander a listing of those licensing actions required or expected the following calendar month. The Licensing Examiner contacts the individuals scheduled for licensing action and reminds

1/ Formal Marine Corps Schools, as specified in the Formal Schools Catalog, are excluded from the requirement to develop and maintain this file.

them that they are eligible for retesting or that their license requires renewal. The examiner, in coordination with the affected individuals, then develops a schedule, 2 weeks in advance for the required/requested testing. The Licensing Examiner discards the past week's action date cards but retains the operator history files for followup action, as appropriate. At the end of each month, the Licensing Examiner resubmits an information copy of the earlier projected monthly licensing activity to the Unit Commander indicating (by lining out those names) licensing actions successfully completed during the month. For newly assigned personnel, the Licensing Examiners should establish local procedures, ensuring that the individual's Service Record Book/Officer Qualification Record (SRB/OQR) is screened for tactical engineer equipment qualifications, files are established, and proficiency tests are scheduled.

c. License Log Book. Any hard cover book containing lined paper will be adequate as a License Log Book. It is used when a tactical engineer equipment SF-46 is issued to record the following data:

- (1) License number
- (2) Issue date
- (3) Specific item(s) of equipment for which licensed
- (4) Type of license (operator, mechanic, renewal, duplicate)
- (5) Restrictions (corrective lenses and/or other physical limitations dictated by applicant's physical profile)
- (6) Expiration date
- (7) Applicant's name.

Any license card numbering system may be used as long as no two current licenses have the same card number. The License Log Book will be retained for 3 years following the last date of entry.

CHAPTER 3 APPLICATION FOR LICENSING

3-1. BACKGROUND. The SF-46 tactical engineer equipment operator/mechanic applicant will submit his/her application for licensing to the Licensing Examiner. At this time the Licensing Examiner ensures that all 'basic medical, administrative, and background information requirements are met. It is also during this contact that the Licensing Examiner will make the first evaluation of the applicant's potential to be a good tactical engineer equipment operator. Particular attention should be given to, and a record should be made of, any limitations which may interfere with the operator's/mechanic's ability to operate tactical engineer equipment safely.

3-2. GENERAL. Section 3-3 gives instructions for completing Part I of the application. Special requirements for reservists, recruiters, and personnel on independent duty are given in Section 3-4. The different testing requirements for different types of transactions are discussed in paragraph 3-5. Special requirements for civilians are discussed in Chapter 7.

3-3. COMPLETING THE APPLICATION, PART 1. The following instructions are given for completing Part I of the Application for Tactical Engineer Equipment Operator's License. The front of the application is shown in Figure 3-1. (The back page of the application is shown in Figure 8- 1.) The Licensing Examiner will assist the applicant in completing the application. Part I of the application will be completed according to the following instructions.

a. All Applicants (Items 1 through 11). The Licensing Examiner should ensure that the complete descriptive information required in Part 1, items 1 through 8, is provided. Item 1 should include the complete spelling of the applicant's name, including middle name. Ensure that the applicant has provided his signature and the date in item 9. Ensure that items 10 and 11 are properly completed according to category, type of license being requested, and items of tactical engineer equipment for which licensing is requested. Instruct the applicant to place an "O" (operator's license) or an "M" (mechanic's license) in the parenthesis beside the item of equipment for which a license is requested. Ensure that the applicant's Commanding Officer/responsible senior signs and dates item 12. Commanding Officers should ensure prudent screening (e.g., maturity, driving history, and attitude) before recommending an individual for licensing. Instructions for completing the back page of the application are provided in Chapter 8.

b. Military Applicants for Duplicate License. Refer to the applicant's Tactical Engineer Equipment Operator History File and License Log Book for verification that the applicant has received an SF-46 for the item(s) of tactical engineer equipment for which a duplicate license is requested. If the applicant has transferred from another unit, check the SRB/OQR for verification. (This procedure should be followed regardless of whether the applicant has maintained his/her files from the previous unit.) If verification is made, sign the application form and proceed with the licensing procedure. (Chapter 8 discusses licensing procedures for a Duplicate License.) See Chapter 7 for requirements applying to civilian applicants.

3-4. SPECIAL REQUIREMENTS: RESERVISTS, RECRUITERS, PERSONNEL ON INDEPENDENT DUTY. This paragraph applies to personnel in the Marine Corps Reserve, recruiters, Inspector and Instructor (I&I) staff members, and other personnel on independent duty. If Reserve units do not have qualified Licensing Officers/Examiners or the necessary items of tactical engineer equipment resident in their unit/I&I staff, then

Application for Tactical Engineer Equipment Operator's License

PART I APPLICATION			
1. Last Name	First Name	Middle Name	2. Date of Birth (Mo./Day/Yr.)
3. Social Security Number	4. Sex M F		5. Height ___ Ft. ___ In.
6. Weight	7. Color of Eyes ___ Hair ___		8. Organization
9. Date and Applicant's Signature		10. Category (Check one): ___ Initial ___ Renewal ___ Duplicate	
<p>11. Item(s) of Tactical Engineer Equipment for Which Licensing is Requested:</p> <p>EARTHMOVING: Tractors, Full Tracked: ___ Sm. w/Bullgrader () / ___ Med. () / ___ W/Multipurpose Bucket () Tractors, Wheeled: ___ Excavator Hydraulic w/Attachs. () / ___ Grader, Road, Motorized () / ___ Roller, Compactor, Vibratory () / ___ Rubber Tired w/Scrapper Unit () / ___ Industrial w/Scrapper Unit () ___ Sweeper, Runway, Vacuum ()</p> <p>CONSTRUCTION: ___ Saw, Chain () ___ Saw, Radial Overarm () ___ Edger, Sawmill () ___ Sawmill, Circular () ___ Mixer, Concrete () ___ Crushing and Screening Plant () ___ Boat, Bridge Erection () Compressors: ___ 4CFM & GSE () / ___ 250 & 600 CFM () ___ Driver Set, Projectile Ramset ()</p> <p>MATERIAL HANDLING: Cranes: ___ Rough Terrain, Hydraulic, 30 Ton w/Attachs. () / ___ Wheel Mounted, Self-Propelled, 7½ Ton () / ___ Wheel-Mounted, Self-Propelled, 3-Ton ()</p> <p>Tractors: ___ Wheeled Industrial () / ___ Rubber Tired, Articulated Steer w/Attachs. ()</p> <p>Trucks: ___ Forklift, RT, 6000 lb. () / ___ Forklift, RT, 4000 lb. () / ___ Light-weight Amphibious Container Handler (LACH) () / ___ Container Handler, Rt, 50,000 lb. ()</p> <p>UTILITIES: ___ Floodlight Set () ___ Frequency Converter () Generator Sets: ___ 3kW-60kW () / ___ 100kW-200kW () / ___ Dummy Load () ___ Laundry Unit, Trailer-Mounted () ___ Reverse Osmosis Water Purification Unit () ___ Water Purification Equipment Set, Mobile () ___ Water Purification Set, Trailer-Mounted () ___ Water Purification Unit, Frame Mounted () ___ Distillation Unit, Water () ___ Bath Unit, Trailer-Mounted () ___ Decontaminating Apparatus () ___ Bottle Cleaning and Charging Station, AN/TAM-4 Van ()</p>			
<p>12. Recommend this individual be examined for qualification to hold the SF-46 on the requested items.</p> <p align="right"> Commanding Officer's Signature Date </p>			

Figure 3-1. Front Page of Application for Tactical Engineer Equipment Operator's License

licensing support should be provided at Active Training Duty (ATD), at a formal school, or from adjacent/qualifying units. Although Reserve units may not have qualified examiners or the necessary equipment to conduct certain ski II performance tests, they are required to conduct those portions of the licensing procedures for which they have qualified examiners and/or equipment, i.e., completing license applications and administering equipment knowledge/awareness tests.

3-5. ADMINISTRATIVE AND TESTING REQUIREMENTS (BY TYPE OF TRANSACTION). This paragraph applies to transactions involving military personnel. See Chapter 7 for procedures and requirements for civilian applicants.

a. Initial Licenses and Renewals. Applicants for a new SF-46 and for renewal of a revoked SF-46 must undergo all applicable tests and inquiries as set forth in Chapters 4, 5, and 6. Routine renewals of SF-46s will require confirmation that physical requirements are still met. Equipment knowledge/awareness tests and skill performance tests are optional for renewals, at the Unit Commander's discretion.

b. Duplicate Issues. There are no testing requirements when a duplicate SF-46 is issued to replace one that was lost or destroyed. Issue the duplicate in accordance with Chapter 8.

c. Upgraded Licenses. When upgrading the operator's SF-46, the applicant must undergo all applicable tests and inquiries for the additional item(s) of tactical engineer equipment for which a license is requested, as set forth in Chapters 4, 5, and 6. Issue the upgraded license in accordance with Chapter 8.

3-6. RECORDING ACTION. The Recording Action establishes or updates the applicant's existing Tactical Engineer Equipment Operator History File. The initial entries in the file should include the application and any medical information pertaining to the applicant. The applicant may now continue with normal licensing procedures as described in Chapters 4 through 6.

CHAPTER 4 PHYSICAL REQUIREMENTS

4-1. GENERAL. Operators must be physically able to safely control their equipment at all times. Applicants selected for licensing will be physically sound, have vision correctable to 20/20 (when applicable), and good mental and physical coordination. A physical examination by qualified medical personnel is a prerequisite. Notwithstanding the required physical examination, poor attitude or emotional instability which would render the applicant a hazard to himself/herself and others, or which in the opinion of the examiner would interfere with the applicant's safe or efficient performance of duties, are sufficient cause to disqualify the applicant.

4-2. SCREENING STANDARDS. The following subparagraphs discuss physical standards for vision, height, and weight requirements. All of these physical standards except depth perception are tested during the physical examination given upon entry into the Marine Corps and in the periodically scheduled physical examinations. Prior to age 36, Marine Corps personnel receive an examination every 3 years within 30 days of anniversary of date of birth. After age 36, a physical examination is given every year. Refer to Section 4-4, Medical Referral Procedures, for procedures concerning personnel whose physical capabilities come into question between physical examinations.

The following physical characteristics are not required for operators of all tactical engineer equipment. Likewise, not all of the physical standards are required for operation of any one item of tactical engineer equipment. Table 4-1 provides a list of the physical requirements for each category of tactical engineer equipment that requires licensing.

The applicable physical requirements for each item of tactical engineer equipment requiring a license will be included in the initial testing and retesting subsequent to license revocation.

See Chapter 7 for standards applying to civilians.

a. Vision. The vision requirement covers three specific areas:

(1) Acuity. This test measures the applicant's ability to see details at a distance. The requirement for this test is vision correctable to 20/20. If the applicant's vision is not 20/20 with glasses/contact lenses, the applicant is disqualified. If the applicant's vision is correctable to 20/20 with glasses/contact lenses, specify the restriction on the back of his/her SF-46.

(2) Color Perception. The standard color perception test given during routine physical examinations is the Falant Lantern test. This test is repeated for the applicant who does not pass it the first time. If failed on the second attempt, the applicant is referred to the eye clinic where he/she will be tested with Pseudo Isochromatic Plates (PIP test). An applicant requiring normal color perception (lights, converters, generators) who does not pass any of the tests mentioned above will become disqualified to continue in the licensing process.

(3) Depth Perception. This test determines how well an applicant can use binocular vision to judge distances. Since this test is not given routinely during physical examinations, special arrangements will have to be made to ensure that applicants receive this testing. The two preferred items of screening equipment for depth-perception and the standards to be met are as follows:

TABLE 4-1.
PHYSICAL STANDARDS REQUIRED FOR OPERATORS
OF TACTICAL ENGINEER EQUIPMENT

TACTICAL ENGINEER EQUIPMENT (Categories)	PHYSICAL REQUIREMENTS*			
	Visual Acuity	Depth Perception	Color Perception	Height/Weight
Earthmoving, Tracked	o	o		o
Earthmoving, Wheeled	o	o		o
Construction, Saws/Edgers	o	o		
Construction, Mixers, Crushing and Screening	o	o		o
Construction, Bridging	o	o		
Material Handling - Self-Powered	o	o		o
Material Handling, Towed	o	o		
Utilities - Lights, Converters Generators			o	

NOTE: The Runway Sweeper (B2126) and Compressor (B0372) are items of aviation ground support equipment and must therefore comply with aviation ground support equipment licensing requirements.

* The specific physical requirements are as follows: Visual Acuity correctable to 20/20; Depth Perception (must be able to read through line c of Armed Forces Vision Tester or line 3 of the American Optical Vectographic Slides); Color perception (must pass Falant Lantern and/or associated tests); Height must be 66" and weight proportional (waiverable by Commander).

(a) Armed Forces Vision Tester- Applicant is required to read through line C.

(b) American Optical Vectographic Slides - Applicant is required to read through line 3.

b. Height and Weight. Applicants for operation of particular items of tactical engineer equipment must meet a height requirement of 66 inches and weight distributed in proportion. Commanders of individuals tested for the operator's or mechanic's license may waive the height and proportional weight requirement if the individual demonstrates adequate strength and is of sufficient height to perform the required duties of his/her MOS or job description with respect to a specific item of equipment.

c. Hearing There is no hearing requirement for operation of tactical engineer equipment. However, in concern for the tactical engineer equipment operator's hearing protection, Unit Commanders, Licensing Examiners, and all other related personnel shall require adherence to the hearing standards of MCO 6260.1 C and BUMEDINST 6260.6B.

d. Age There is no age requirement, but the maturity of the individual should be taken into consideration.

e. Other Restrictions. Any physical limitations, i.e., epilepsy, which may restrict the operator, will be specified in the "Restrictions" box on the applicant's SF-46.

4-3. OBTAINING APPLICABLE MEDICAL INFORMATION ON THE APPLICANT. Prior to completing Part II, "Examination Results", of the application form, applicable medical information on the applicant must be obtained. This paragraph applies to military applicants for initial licenses and renewals. Refer to Chapter 7 for civilian applicants.

The example memorandum, shown as Figure 4-1, may be used to obtain the needed medical information. (A blank form is located in Appendix C). prior to sending this memo, refer to Table 4-1 for the actual physical standards required to operate the item(s) of tactical engineer equipment for which the applicant is applying. The Licensing Examiner checks the appropriate entries, signs the memo, and forwards it to the Medical Officer for verification.

4-4. MEDICAL EVALUATION REFERRAL PROCEDURE. This paragraph applies to applicants who require medical evaluation for reasons other than a detailed examination. Have the applicant report to the medical officer with a memorandum describing the condition(s) requiring evaluation. (Figure 4-2 is an example of such a memorandum. A blank form is located in Appendix C). Attach a copy of Table 4-1, Physical Standards Required for Operators of Tactical Engineer Equipment, to the memo.

4-5. RECORDING ACTION. When verification is received from the medical authority that the applicant meets the physical requirements, complete the applicable block in item 13 in Part II of the license application form.

Memorandum

FROM: LICENSING OFFICER

Date:

TO: MEDICAL OFFICER

SUBJ: Applicant's Name, Medical Evaluation of

Subject individual has applied for a Tactical Engineer Equipment Operator's/Mechanic's License (SF-46). Current regulations specify the following physical requirements for licensing approval:

	Yes	No		
() Vision correctable to 20/20	_____	_____	With glasses/ contact lenses	_____
() Normal color perception	_____	_____		
() Height (66") and Weight proportional	_____	_____		
() Depth perception (must be able to read through line C of Armed Forces Vision Tester or line 3 of the American Optical Vectographic Slides.	_____	_____		

Request you review latest physical examination to verify the above physical standards for which there is an (X) marked. Please confirm these physical requirements have been met by initialling in either the "Yes" or "No" space beside each physical requirement and signing below.

Licensing Officer's Signature

FROM: MEDICAL OFFICER

Date:

TO: LICENSING OFFICER

SUBJ: Applicant's Name, Medical Evaluation of

Requested medical evaluation has been complied with as indicated above.

Medical Officer's Signature

FIGURE 4-1. REQUEST FOR MEDICAL INFORMATION

Memorandum

FROM: LICENSING OFFICER
TO: MEDICAL OFFICER
SUBJ: Applicant's Name, Medical Evaluation of

Date:

Subject individual currently holds a Tactical Engineer Equipment Operator's/Mechanic's License (SF-46) for the following categories of tactical engineer equipment

_____.

The physical standards required of applicants seeking a tactical engineer equipment operator's/mechanic's license are provided in Table 4-1, which is attached to this memo. Subject individual has been experiencing the following physical problems: _____

_____.

A medical officer's evaluation of the subject individual's ability to safely operate the above mentioned categories of tactical engineer equipment is requested. Based upon this evaluation, make a recommendation for or against continued operation of the equipment by initialling in one of the boxes below.

- The operator's physical condition could hamper his/her ability to operate the categories of tactical engineer equipment listed above. I recommend operation of this equipment by the operator be discontinued.
- The operator's physical condition should NOT hamper his/her ability to operate the categories of tactical engineer equipment listed above. I recommend operation of this equipment by the operator be continued.

Licensing Officer's Signature

FROM: MEDICAL OFFICER
TO: LICENSING OFFICER
SUBJ: Applicant's Name, Medical Evaluation of

Date:

Requested medical evaluation has been complied with as indicated above.

Medical Officer's Signature

**FIGURE 4-2. MEDICAL EVALUATION
REFERRAL MEMORANDUM**

4-5/(4-6 blank)

CHAPTER 5 EQUIPMENT KNOWLEDGE/AWARENESS

5-1. GENERAL. Physically qualified applicants must take an equipment knowledge/awareness test for an initial license or re-licensing subsequent to revocation of their license. Operators selected for licensing will demonstrate satisfactory knowledge/awareness of the specific equipment for which a tactical engineer equipment SF-46 is sought. It is essential that the operator be familiar with the major components of the equipment and their functions. The operator should also be familiar with maintenance services for which he is responsible and safety precautions. Each potential operator will be subject to examination in the following areas:

a. All Major Components. Ability to identify major components of the equipment and their basic functions.

b. Operator's Manual and Lubrication Order. Familiarity with the pertinent operator's manual and lubrication order. An operator must be familiar with the types of lubricants to be used, intervals to be observed, and specific precautions to be followed under unusual operating conditions.

c. Preventive Maintenance Service. Ability to demonstrate satisfactorily a knowledge of the preventive maintenance service the operator must perform.

d. Safety Precautions. A knowledge of the equipment, the equipment's safety devices, and procedures required for its safe operation.

5-2. WRITTEN/ORAL TEST. The written/oral test provides a means for determining the applicant's knowledge of data that should be mastered before the performance test is administered. Standards for this test must be high. Procedures must be impartial and thorough to ensure desired results. No single written/oral test covering equipment knowledge/awareness is applicable for all equipment. Appendix D contains representative tests on selected items of tactical engineer equipment. At the Licensing Officer's discretion, similar tests may be prepared, using data from operator's manuals, applicable to the equipment being tested. The test questions contained in Appendix D should be replaced/varied as frequency of usage requires.

5-3. PROCEDURES OF TEST ADMINISTRATION. Follow these procedures when administering written/oral tests:

a. Testing Environment. It is extremely important that the place of testing be an area where the applicants will be able to concentrate. If possible, provide a comfortable testing area that is quiet, free of distractions, and has proper lighting and ventilation.

b. Taking the Test. Prior to administering the test, the Licensing Examiner should:

(1) Provide applicants with pencils.

(2) Inform applicants that they have 25 minutes to take the test.

(3) Read the instructions provided at the top of the test form and make sure applicants understand how to take the test. Applicants should answer only the 20 circled test questions. Let the applicant know that if he/she misses six or fewer of the 20 test questions, this is a passing score. Applicants for the mechanic's license will be tested on a fewer number of questions, i.e., the Licensing Examiner will circle only those questions pertaining to specific required job knowledge. Answering 70 percent of those questions circled will be a passing score for each test.

(4) Ask the applicants if they have any questions before they begin.

c. Testing the Applicant with Limited English Language Capability. An oral test may be given to personnel whose primary language is not English or to applicant's with reading deficiencies. The written test for the item of equipment being tested will be used for the oral test, also. During oral testing, the applicant will be tested individually and testing will be performed discretely so that other potential applicants cannot hear the questions being asked. If the Licensing Examiner does not feel qualified to give the test to a non-English speaking applicant, he may designate someone who can speak the language to translate the information and assist in the testing.

d. Testing Groups of Applicants. When testing more than one applicant at a time on the same item of equipment, distribute test forms with different specified questions. Explain to them that the test questions are different but equal in difficulty.

e. Retesting Applicants. When applicants appear for retesting, make sure they are assigned a number of test questions different from those they had originally.

f. Scoring the Tests. The correct answers to the questions are listed on a separate page attached to each test (refer to Appendix D). The Licensing Examiner may develop an answer key in a method that will allow efficient scoring of each test.

5-4. NOTIFYING UNSUCCESSFUL APPLICANTS. Applicants who do not pass the required equipment knowledge/awareness tests shall not continue with the licensing process. After grading the test, the Licensing Examiner will identify the questions missed and critique the test in a manner that will increase the applicant's knowledge and understanding. The applicant may return after at least 48 hours and be retested any time within 60 days following the test date. Tell the applicant to study the operator's manual on the specific item of tactical engineer equipment before taking the test again.

NOTE

IT IS THE RESPONSIBILITY OF LICENSING EXAMINERS TO ENSURE THAT REFERENCE DOCUMENTS, I.E. OPERATOR'S MANUALS ON EACH ITEM OF TACTICAL ENGINEER EQUIPMENT ASSIGNED TO THEIR UNIT, BE RESIDENT IN THE UNIT. (IT IS NOT INTENDED THAT DUPLICATE LIBRARIES BE MAINTAINED, ONLY THAT OPERATORS HAVE READY ACCESS TO APPROPRIATE PUBLICATIONS.)

5-5. RECORDING ACTION. File all test forms in the Applicant's Tactical Engineer Equipment Operator History File. DO NOT allow applicants to take copies of any test with them when they leave the licensing office.

CHAPTER 6 SKILL PERFORMANCE

6-1. APPLICABILITY. Applicants who have met the physical requirements and passed the equipment written knowledge/awareness test are eligible to take the skill performance test. The purpose of this test is to give the license applicant an opportunity to demonstrate his/her ability to operate the equipment effectively and safely. Validation of previously passed skill performance tests may be required, at the Unit Commander's discretion, of tactical engineer equipment operators when assigned to a new unit.

6-2. TRAINING. Training is essential for effective and safe operation of tactical engineer equipment. Due to constant improvement in equipment design and maintenance techniques, engineer personnel will require additional training to maintain their proficiency. The training of the individual and of the unit is a continuous process. The Commander, through his staff, is responsible for the safe use and operation of the engineer equipment in the unit. In addition, the Engineer Equipment Officer is responsible to the Commander for the overall supervision of the engineer equipment section.

a. Subject Areas. Training will include the following areas:

(1) Equipment Characteristics and Components. To become an effective operator, the potential operator must have a thorough knowledge of:

(a) Characteristics, basic principles, and functions of major components of the items of equipment and the equipment's normal attachments.

(b) Inspections/checks and preventive maintenance services that must be performed on the items of equipment.

(c) The operator's manual pertaining to the item of equipment on which the instructions are being conducted.

(2) Safety Procedures. Emphasis must be placed on safety throughout the course of instruction/training. Safety procedures should always be observed and emphasized. This is particularly true for Material Handling Equipment operators when handling munitions/explosives. Refer to MCO 8023.2 for safety policies, requirements, and procedures concerning the handling of munitions/explosives.

(3) Publications, Forms, Reports, and Equipment Logbook. The tactical engineer equipment operator is directly concerned with publications, forms, etc. used in the daily operation and maintenance of equipment. Instruction should include familiarization with these publications to ensure proper maintenance and control of tactical engineer equipment.

(4) Tools and Equipment. This phase of instruction must be designed for the potential operator to gain a general knowledge of the tools and equipment essential for the items of equipment on which the instruction/training are conducted.

(5) Fire Prevention and Firefighting. All prospective operators must be made aware of the danger of fire on or within the equipment to be operated. Emphasis must be placed on fire prevention and proper use of fire extinguishers.

(6) Operator Maintenance. During this phase of instruction, specific emphasis should be placed on the operator's responsibility regarding maintenance. This will normally include, as a minimum, before, during, and after operation checks.

(7) Starting, Operating and Stopping Procedures. The prospective operator should be trained on proper procedures for starting or placing the equipment item into operation, normal operations, and proper procedures for stopping/shutting down the item.

(8) Field Expedients and Repair and Recovery Operations. Properly instructed operators with thorough knowledge of their equipment can often make temporary repairs to a disabled item of equipment that will enable them to move it to a maintenance facility. However, care must be exercised in teaching expedient repair. Since some expedient repairs might make the equipment unsafe to operate and/or can be extremely harmful to the equipment, they should be resorted to only in cases of extreme emergency, e.g., jump starting. Likewise, the tactical engineer equipment operator must be familiar with the proper recovery operations for the item(s) of equipment he/she will be operating.

(9) Washing and Cleaning and Decontamination Operations. Procedures for washing and/or cleaning and decontaminating are not identical on all equipment. The proper washing and/or cleaning procedures and decontamination operations that the operator needs to know are prescribed in the equipment technical manuals.

(IO) Hand and Arm Signals. Tactical engineer equipment operators must be thoroughly familiar with hand and arm signals for the item(s) of tactical engineer equipment they will be operating. Knowledge of these signals is essential to safe operation of the equipment. This information is also provided in pertinent tactical engineer equipment technical manuals.

(11) Emergency Destruction. When capture or abandonment of tactical engineer equipment to an enemy is imminent, familiarity with the proper methods of destruction/demolition is crucial. Tactical engineer equipment operators must be familiar with the method(s) of demolition/destruction for the item(s) of tactical engineer equipment they will be operating. These methods are cited in the applicable tactical engineer equipment technical manual.

b. Training Methods. There are basically four means of training available: the formal course (which consists of full-time organized schooling), correspondence courses, factory training, and on-the-job training.

(1) Formal Courses. Formal courses for engineer equipment operators are conducted at various schools and centers at different locations. Many of the courses are conducted at the Marine Corps Engineer School, Marine Corps Base, Camp Lejeune, North Carolina. Courses for the Engineer Operations Chief, Journeyman Combat Engineer, and Journeyman Engineer Equipment Operator, to name a few, are conducted at the Marine Corps Engineer School. Other course locations include the U.S. Army Training Center, Fort Leonard Wood, Missouri, and U.S. Naval School, Construction, Port Heuneme, California. Refer to the Marine Corps Formal Schools Catalog, P 1500.12L, for a listing of courses and locations.

(2) Marine Corps Institute Courses. Various Marine Corps Institute correspondence courses are available to the individual Marine. These courses include material on the individual's technical field and material of general interest. A listing of the available courses and the required application forms are available through the Unit Training Officer.

(3) Factory Training. Training courses are established periodically for a limited number of Marines. These courses are held at the factory of the manufacturer who

furnishes the particular piece of engineer equipment which is to be studied. Occasionally, mobile training units and factory trained instructors are provided by various manufacturers to augment training on high density items at Marine Corps bases in the CONUS.

(4) On-The-Job Training. On-the-job training consists of training in the unit, conducted by unit personnel and administered to the basic Marine and to operators and mechanics possessing lesser skills. The training includes classroom instruction, shop equipment demonstrations, and trainee performance while under supervision of a technically qualified Marine.

6-3. PROCEDURES OF TEST ADMINISTRATION. It is assumed that the applicant, because of experience and/or training, is able to perform the various tasks called for by the skill performance tests. These tests require typical equipment operations and should be set up and administered with economical use of equipment, man-hours, and facilities.

a. Testing Environment. If possible, the applicant should take his/her skill performance test in an area/environment where the tactical engineer equipment would normally be operated.

b. Scheduling the Test. Because of the lack of particular items of tactical engineer equipment, applicants may be required to go where the equipment is located in order to take their skill performance test. This is particularly true in the case of Reserve license applicants. This will require prior scheduling with the Licensing Examiner to ensure that all applicants to be tested on a particular item of equipment can be tested on the same day.

c. Taking the Test. When taking the skill performance test, applicants will be tested individually. The skill performance tests include preoperational, operational, and postoperational checks, and a "demonstration of typical operations with the specific "item of tactical engineer equipment for which the SF-46 is sought. Appendix E includes suggested checklists on selected items of tactical engineer equipment. These checklists may be used to record the applicant's performance during the skill performance test. At the Commander's discretion, similar checklists will be prepared for the specific equipment on which testing is being conducted. The Licensing Examiner will read the instructions that appear on page E-2 of this technical manual to the applicant ensuring that the applicant clearly understands the testing procedures. The length of time involved in taking the test will depend on the item of equipment being tested. The examiner should use judgement on the amount of time to be given for responding to test procedures. The operators should not feel pressured or rushed but neither should they be allowed an excessive amount of time.

d. Termination of a Skill Performance Test. Licensing examiners have primary responsibility to stop a skill performance test when it is in the interest of safety to do so. They should use their best judgement, keeping in mind that the following situations would require immediate termination:

- (1) Equipment proves to be in bad mechanical or unsafe operating condition.
- (2) Applicant has obvious lack of skill in operating the equipment being tested.
- (3) Applicant is unduly nervous and/or completely lacks confidence.
- (4) Applicant is in unsatisfactory physical condition.
- (5) Applicant demonstrates willful recklessness.
- (6) Applicant becomes involved in an accident.
- (7) Applicant refuses or is unable to follow directions.

When terminating a skill performance test, the Licensing Examiner will give the specific reason for termination in the blank lines on the checklist.

e. Test Evaluation. Skill performance tests will be evaluated as satisfactory or unsatisfactory. A short line is provided below each task item on the skill performance checklist on which the examiner can make a check mark to denote that the applicant has performed or answered correctly. If examiners feel that a short written explanation of their actions are necessary, they may note this on the test sheet. When evaluating these tests, examiners must be guided by applicant performance rather than their experience background and history.

f. Retesting Unsuccessful Applicants. When an applicant is retested on a skill performance test, only the particular items checked as unsatisfactory on the previous skill performance checklist are mandatory. Others are optional, at the Licensing Examiner's discretion.

g. Unique Requirements. In cases where equipment requires additional personnel for safe operation, e.g., ground guides or signal men, qualified personnel will be provided by the testing unit.

6-4. NOTIFICATION TO UNSUCCESSFUL APPLICANTS. Applicants who fail the skill performance test will be critiqued, at the time of failure, as to the reason for failure. Correct performance will be explained and/or demonstrated. The applicant may return and be retested (on the items they failed) any time after 48 hours but within 60 days following the test date. Retain the applicant's score sheet in the Tactical Engineer Equipment Operator History File and mark the action date card "retest. "

6-5. RECORDING ACTION. Complete item 13 of part 11 of the individual's application form, which is found in Chapter 8.

CHAPTER 7 CIVILIAN APPLICANTS

7-1. GENERAL. SF-46 requirements for civilian applicants are somewhat different from the requirements for military applicants. These differences depend primarily on whether or not the civilian applicant is a civil service employee, whether operating the equipment will constitute a primary or secondary duty, and on what type of equipment is to be operated. The following paragraphs summarize the special requirements for civilian applicants. Refer to the Federal Personnel Manual, Chapter 930, for more detailed guidance on civil service employees.

Except when otherwise noted, the standards and procedures given below apply to all civilian applicants within the United States and to American citizens overseas. Overseas applicants who are foreign nationals should be licensed in accordance with policies set forth by the local command. The following definitions are given for a better understanding of the licensing procedures applying to civilians.

a. Civil Service Employee. Civil service employees are those who have obtained their jobs through competitive examination under rules and regulations established by the U.S. Civil Service Commission.

b. Non-Civil Service Employee. A non-civil service civilian employee is one who has been hired directly by the Marine Corps, rather than holding an appointment. This category includes many civilian workers hired through a contract to an outside civilian firm and emergency (temporary) employees.

c. Primary Operator. A primary operator is one whose main duties involve operating an item of tactical engineer equipment.

d. incidental Operator. An incidental operator is one whose primary duties do not involve operating equipment, but who must occasionally operate equipment. An example would be maintenance personnel who only operate the equipment when it is under service or repair.

7-2. PHYSICAL REQUIREMENTS FOR CIVILIANS. Civilians are not subject to the same rigid physical standards that are required of Marines. Testing of civil service employees is mandatory for those civil service employees whose current job descriptions include a licensing requirement. For those civil service employees whose current job descriptions do not require a license, licensing is optional based on the incumbent's desires. However, as incumbents vacate these positions, the job descriptions will be rewritten to specify the requirement for licensing prior to refilling these positions. Consequently, it will be the responsibility of the Licensing Examiner to judge whether the applicant is physically/mentally able to operate the equipment safely. The civilian applicant's skill performance test should be conducted under careful observation and scrutiny by the Licensing Examiner to ensure that the applicant is fully qualified to operate the equipment for which a license is required.

a. All Civilians. The following standards for epilepsy apply to both civil service and non-civil service civilian applicants. Applicants who have suffered epileptic seizures within the previous 2 years are automatically disqualified from holding an SF-46, according to Civil Service Commission regulations. An epileptic condition may be described by the applicant as blackouts, convulsions, fainting spells, loss of consciousness, grand mal, petit real, or similar terms. If the applicant has been free of epileptic

seizures for at least 2 years, he/she may be qualified to operate equipment following medical evaluation, as discussed in paragraph 7-3.

b. Non-Civil Service Employees Only. Civilians who fall within the definition of non-civil service employees (see paragraph 7-1b.) must meet all physical screening requirements that apply to Marine Corps applicants for SF-46s in the same category.

c. Civil Service Employees. Civilians who are civil service employees fall into a special category. Civil Service Commission physical standards for operators are considerably different from Marine Corps standards. In all cases, a qualified military or Federal medical officer may grant a waiver of any particular requirement. When screening civil service employees, screen to the standards given in the following paragraphs:

7-3. MEDICAL REFERRAL PROCEDURES. These procedures apply to all civilian applicants, both civil service and non-civil service employees.

a. Epilepsy. Have the applicant write out and sign a statement describing the last occurrence of epileptic seizure, including the date when it occurred. If the applicant can then produce a medical recommendation for licensing, signed by a Federal or military medical officer, he/she may be issued an SF-46 to expire no more than 1 year from the date of issue. If he/she cannot produce such a recommendation, give him/her a copy of SF-217, "Medical Report (Epilepsy)" (Figures 7-1 and 7-2). Inform the applicant to have the form completed and signed by a personal physician. When the applicant returns with the completed form, attach a memo to it describing the type of equipment to be operated and the maximum number of hours the applicant will operate the equipment each day. Then have the applicant report to a medical officer for final evaluation of the applicant's ability to operate safely. If the medical officer recommends licensing, an SF-46 may be issued to expire no more than 1 year from date of issue.

b. All Other Conditions. For all other conditions requiring medical referral, attach a memorandum to the applicant's application describing the type of equipment to be operated, the approximate number of hours of operation required each day, and the condition that requires evaluation. Have the applicant bring the attached memorandum to a medical officer and request a medical evaluation of his/her ability to operate equipment safely. If the applicant returns with a medical recommendation for licensing, a normal SF-46 may be issued in accordance with the procedures described in Section 7-4 or 7-5.

7-4. ISSUING PROCEDURES (CIVIL SERVICE EMPLOYEES ONLY). Use these procedures for issuing licenses to the civil service applicant.

a. Primary Operator Requirements. Civil service employees whose primary duties involve operating tactical engineer equipment will normally have been qualified for the job through competitive examination. Such applicants may be issued an SF-46 after successfully completing the skill performance test for the equipment which they will be operating. The expiration date should be 3 years from the issue date.

b. Incidental Operator Requirements. Incidental civil service operators must complete the following tests and inquiries:

- (1) Physical evaluations by medical officer to standards set forth in Section 7-2.

TO BE GIVEN TO PERSON
EXAMINED WITH A PRE-
ADDRESSED "MEDICALLY
CONFIDENTIAL" ENVELOPE.

UNITED STATES CIVIL SERVICE COMMISSION

FORM APPROVED
O.M.B. No. 50-R0337

MEDICAL REPORT (EPILEPSY)

PART A—TO BE COMPLETED BY AGENCY

NOTE: See FPM Chapter 339 and FPM Supplement 339-31 for disposition and/or filing of this form.

1. NAME OF APPLICANT (Last) (First) (Middle initial)		2. DATE OF BIRTH (Mo., Day, Yr.)	
3. ADDRESS (Including ZIP Code)		4. TITLE OF POSITION	
5. MOTOR VEHICLE OPERATOR (Answer 5(a) through 5(g) if this is the position applied for.)			
5(a). TYPE OF VEHICLE AND LOAD CAPACITY	5(b). AMOUNT OF DRIVING (Hours per day)	5(c). IS DAYTIME DRIVING REQUIRED? <input type="checkbox"/> YES <input type="checkbox"/> NO	5(d). IS NIGHT DRIVING REQUIRED? <input type="checkbox"/> YES <input type="checkbox"/> NO
5(e). CURRENT STATE DRIVERS LICENSE STATE: LICENSE NUMBER:	5(f). IS DRIVING REQUIRED ON CONGESTED HIGHWAYS OR DURING PEAK TRAFFIC HOURS? <input type="checkbox"/> YES <input type="checkbox"/> NO <i>If "yes", please describe.</i>		
5(g). DOES APPLICANT HAVE GOOD DRIVING AND SAFETY RECORD? <input type="checkbox"/> YES <input type="checkbox"/> NO <i>If "no," give record of offenses and dates.</i>			

6. OTHER POSITIONS (Answer 6(a) through 6(b) if position applied for is other than Motor Vehicle Operator.)
6(a) DUTIES OF POSITION NAMED IN ITEM 4 (Describe fully)

6(b) HAZARDOUS CONDITIONS OR SITUATIONS INVOLVED IN POSITION. (Describe fully)
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7. SIGNATURE OF AGENCY OFFICIAL	9. AGENCY ADDRESS
8. DATE	

PART B—TO BE COMPLETED BY APPLICANT

DATE OF LAST SEIZURE	SIGNATURE
----------------------	-----------

EXAMINING PHYSICIAN: Report on other side

217-101

Standard Form 217 (2-75)
U.S. Civil Service Commission
FPM Supplement 339-31

Figure 7-1. Front Page of SF-217, Medical Report (Epilepsy)

(2) Equipment written (knowledge/awareness) test, in accordance with guidelines set forth in Chapter 5.

(3) Skill performance test, in accordance with Chapter 6.

The expiration date should be 3 years from the issue date.

7-5. ISSUING PROCEDURES (NON-CIVIL SERVICE EMPLOYEES). Non-civil service civilian applicants must meet all testing and screening requirements that apply to Marine Corps applicants for SF-46s, including physical screening, equipment knowledge/awareness testing, and skill performance testing. Successful applicants may be issued an SF-46 to expire 3 years from the date of issue, but no longer than expected term of employment, if known.

7-6. RENEWAL, DUPLICATE AND UPGRADED ISSUES. This paragraph applies to all civilian applicants, both civil service and non-civil service employees.

a. Renewal. Civilian applicants for renewal of an expiring or expired SF-46 must meet the requirements for renewals as outlined in Chapter 3, Section 3-5.

b. Duplicate. Follow the procedures in Chapters 3 and 8 when a civilian applies for a duplicate license, except that the applicant's office must place the following entry in the application form:

“All entries in item 11 were taken from the entry in the individual's personnel file. License expires (date).” Specify expiration date for each item of equipment.

c. Upgrade. Follow the procedures in Chapters 3 and 8 when upgrading a civilian's license.

7-7. NOTIFICATION AND RECORDS. Follow Chapter 8, notification procedures, except that when paragraph 22a of Part III of the application (requiring a service record entry) is checked, strike out the reference to Page 11, Service Record Book/Officer's Qualification Record. In its place, insert the words "personnel file."

Tactical Engineer Equipment Operator History Files will be maintained either separately from or together with the files on military applicants.

CHAPTER 8 PROCEDURES FOR ISSUING LICENSES

8-1. GENERAL. The following paragraphs present basic recording requirements for issuing or denying the SF-46.

8-2. COMPLETING THE DOCUMENTATION. This paragraph applies to all successful license applicants.

a. Completing the Application, Parts II and 111. Part I of the application, with the exception of the Commanding Officer's recommendation, should have been completed during the initial interview (Chapter 3). In part 11 (shown in Figure 8-1 on the following page), after receiving the Commanding Officer's recommendation, ensure that all applicable test results and restrictions are entered in items 13 and 14 before signing item 15 and dating item 16. Prepare Part III and the SF-46 for signature by the Licensing Officer, in accordance with subparagraphs (1) and (2), which follow. The Licensing Officer should sign and date items 23 and 24, at the same time signing the front of the applicant's new SF-46. At this time, the Licensing Officer will direct the applicant to provide his/her approved application to the SRB/OQR clerk for appropriate page 11 entries by checking item 22a. The Licensing Officer will ensure a copy of the application is retained in the applicant's Action Date File. The applicant will return the application to the Licensing Examiner with item 22b initialed by the SRB/OQR clerk. When the completed application is returned, the Action Date File copy is discarded. Prepare Part 111 for signature as follows:

(1) Initial Licenses and Renewals. Check item 18 "Yes" or "No," as applicable. If the license is being issued, assign a *license* number in item 19. At the same time, enter the date of issue, applicant's name, and the license expiration date opposite the card number in the License Log Book (refer to Chapter 2). The Expiration Date, item 21, should be 3 years from "Date of Issue," item 20. Place a check mark in the box opposite item 22a, requiring a page-11 entry in the applicant's SRB/OQR (Service Record Book/Officers Qualification Record). A sample page-11 SRB/OQR entry is shown in Figure 8-2. When an operator's license is issued, record all items of tactical engineer equipment for which a license has been issued. Also, in brief concise comments, record the following information in the License Log Book:

- (a) Type of license
- (b) Date the license becomes void
- (c) Any restrictions, if applicable, imposed on the operator, i.e., operator must wear glasses/contact lenses for vision correctable to 20/20
- (d) For revocations, record the fact, the date, and the reason.

If the applicant is a civilian, strike out the reference to Page-11 SRB/OQR and insert "personnel file."

(2) Duplicate Issues. Complete items 18 through 21, based on the information contained in the applicant's Tactical Engineer Equipment Operator's History File or in the SRB/OQR.

PART U EXAMINATION RESULTS

13. Confirmation of the required physical qualifications was received on _____.

Item of Equip.	Physical		Written		Skill		PASS	Init.	Date
	SAT	UNSAT	SAT	UNSAT	SAT	UNSAT			

14. Restriction: Corrective Lenses Req. Other

15. Signature of License Examiner

16. Date

17. Remarks:

PART III LICENSE ACTION

18. License Issued Yes No 19. License No. _____ 20. Date Issued _____ 21. Expir. Date _____

22. a. Tactical Engineer Equipment qualified to operate taken from information from Part II, items 13 and 14 and from Part III, items 18 through 21, should be entered on Page 11 of the subject individual's Service Record Book/Officer's Qualification Record.
 b. Return to License Examiner. (Initials indicate completion of recording action)

23. Signature of Licensing Officer: _____ 24. Date _____

PRIVACY ACT NOTICE

Authority: This information is provided pursuant to Public Law 93-579 (Privacy Act of 1974), December 31, 1974, for individuals being issued Standard Form 46, U.S. Government Motor Vehicle Operator's Identification Card. U.S. Code, Title 5, Section 301.

Purpose and Use: The purpose of SF 46 is to identify Federal employees who have been licensed by their agencies to operate specific items of Government-owned tactical engineer equipment.

Effects of Nondisclosure: The effect of nondisclosure of the information required on the SF 46 is that an individual will not be authorized to operate Federal tactical engineer equipment. The disclosure of this information is mandatory when an employee's job requires operating Federal tactical engineer equipment and is voluntary otherwise.

Information regarding disclosure of your Social Security Number Under Public Law 93-579 Section 7(b): Disclosure by you of your Social Security Number (SSN) is mandatory to obtain the U.S. Government Motor Vehicle Operator's Identification Card. Solicitation of the SSN by the United States Civil Service Commission is authorized under provisions of Executive Order 9397, dated November 22, 1943. The SSN is used as an identifier throughout your Federal career from the time of application through retirement. The information gathered through the use of the number will be used only as necessary in personnel administration processes carried out in accordance with established regulations and published notices of systems of records. The SSN also will be used for the selection of persons to be included in statistical studies or personnel management matters. The use of the SSN is made necessary because of the large numbers of present and former Federal employees and applicants who have identical names and birth dates, and whose identities can only be distinguished by the SSN.

Figure 8-1. Back Page of Application for Tactical Engineer Equipment Operator's License

ADMINISTRATIVE REMARKS (1070)

DATE: Articles UCMJ explained to me this date as required by Article 137, UCMJ.	DATE: Articles UCMJ explained to me this date as required by Article 137, UCMJ.	BLOOD TYPE
(Signature) <i>JMB</i>	(Signature) <i>JMB</i>	CLASS SWIMMER (DATE)
		BY DIRECTOR <i>JMB</i>

830208 HQSVCBn,TBS,MCDEC,QUANT: SNM Fuller received tactical engineer equipment operator's license No. A001 on 8 Feb 1983 for the Road Grader, Rock Crusher and Screening Plant and the Wheel-mounted crane. Corrective lenses required. License expires 860207.

By Dir

J. M. Bras

830424 HQSVCBn,TBS,MCDEC,QUANT: SNM Fuller's license revoked 23 Apr 1983 for causing accident while operating wheel-mounted crane. Not eligible for new SF-46 until 25 Jul 83.

By Dir

J. M. Bras

SAMPLE

FULLER, William A.

123 45 67 89

NAME (last, first, middle)

SSN

NAVMC 118 (11) REV. 2-76) SN: 0000-00-000-2704 U/I: SH
PREVIOUS EDITIONS WILL BE USED.

11. a

Figure 8-2. Sample SRB/OQR Entry

b. Government Vehicle Operator's Permit, SF-46. Complete both sides of the SF-46, giving complete information, as shown in Figure 8-3. On the front of the SF-46, in the top right-hand corner, is a block for the card/license number. Refer to item 19 on the back page of the application for the license number. The operator's full name, sex, height, weight, date of birth, social security number, and color of hair and eyes can be taken from the front page of the application form, items 1 through 7. "Date Issued" should be completed, as appropriate, and "Date Expires" should read "3 years from Date Issued." The operator will sign in the applicable blank and the Licensing Officer will sign under "Signature and Title of Issuing Official." At this time, the Licensing Officer will also sign and date items 23 and 24 on the application form. On the back of the SF-46, ensure that applicable restrictions are entered, i.e., "corrective lenses required." Under "Type Vehicle and/or Equipment," list each item of tactical engineer equipment qualified to operate, one per line. Beside each item of equipment, indicate whether licensed for an operator's or mechanic's license by placing in parenthesis an "O" or an "M." Figure 8-3 reflects this procedure. The "Capacity" column should be left blank. Under "Qualifying Official," the Licensing Officer will sign beside each item of tactical engineer equipment and date each item of equipment. The expiration date will be 3 years from the date the Licensing Officer has provided for each item of equipment. Space under "Other Records" may be used as a continuation of items of tactical engineer equipment licensed to operate.

(1) Initial License. Base all SF-46 entries on the information contained in Parts 1, 11, and 111 of the application form.

(2) Renewal. If there are no new operator categories or additional special qualifications, complete the SF-46 with qualifications identical to those on the expired SF-46. Destroy the old SF-46 before signing the new one. Enter any additional qualifications on the back of the new card.

(3) Duplicate. Upon verification that the applicant previously held a valid SF-46 by reviewing the Tactical Engineer Equipment Operator History File and/or the SRB/OQR, issue a new SF-46. Enter the notation "Duplicate" in the front, top margin of the SF-46. The Licensing Officer should sign the front of the card. The Licensing Officer signs the back and dates each qualification. Expiration date(s) will be the same as on applicant's previous license.

(4) Upgrade. When an operator becomes qualified to operate additional items of tactical engineer equipment, these items of equipment will be added to his/her current SF-46. The Licensing Officer will sign and date beside each new entry. The expiration date will be 3 years from the date entered. Blank lines under "Other Records" on the back of the SF-46 may be used for continuation of additional licensed items of equipment. If an operator is licensed on more than eight items of tactical engineer equipment, another SF-46 will be issued. The additional SF-46 will give the operator's name and original license number. On the back, each additional item of equipment will be listed, one per line. The Licensing Officer will sign and date beside each item of equipment. The expiration date will be 3 years from the date the Licensing Officer has provided for each item of equipment. In the "Restrictions" block on the back, enter the notation "Page 2."

c. Action Date Card. If the transaction was an initial license or a renewal, enter the applicant's name on the action date card for 4 weeks before the new expiration date.

Standard Form 46 Revised Jan 1977 USCSC FPM Chapter 930		U.S. Government Motor Vehicle Operator's Identification Card		Card No 122
Name of Operator Harrell Richard E.		Sex M	Date Issued 6 Jun 83	
Height 6'0"	Weight 180	Date of Birth 25 Sep 56	Social Security No. 224-92-0922	Date Expires 3 YEARS FROM DATE ISSUED
Color of Hair BR		Color of Eyes BR		Signature of Operator (Not valid until signed) Richard E. Harrell
NOT TRANSFERABLE Card must be carried at all times when operating Government vehicles.				
Name and Location of Issuing Unit SUPPORT COMPANY 22 ENGINEER BATTALION CAMP LEWIS, N.C. 28542			Signature and Title of Issuing Official William R. Ford Staff Sgt. Officer	
The holder of this card is qualified to operate U.S. Government vehicles and/or equipment specified, subject to the restrictions set forth on the reverse of this card.				
4E-105				
PRIVACY ACT NOTICE				
<p>Authority: This information is provided pursuant to Public Law 93-579 (Privacy Act of 1974), December 31, 1974, for individuals being issued Standard Form 46, U.S. Government Motor Vehicle Operator's Identification Card, U.S. Code, Title 5, section 301.</p> <p>Purpose and Uses: The purpose of SF 46 is to identify Federal employees who have been authorized by their agencies to operate Government owned motor vehicles.</p> <p>Effects of Nondisclosure: The effect of nondisclosure of the information required on the SF 46 is that an individual will not be authorized to drive a Federal motor vehicle. Failure to disclose accurate information that results in a negative reply from the National Drivers Register Service can result in revocation of an issued operator's identification card. The disclosure of this information is mandatory when an employee's job requires driving a Federal motor vehicle and is voluntary otherwise.</p> <p>Information Regarding Disclosure of Your Social Security Number Under Public Law 93-579 Section 7 (b): Disclosure by you of your Social Security Number (SSN) is (continued on reverse)</p>				

Restrictions Corrective Lenses Required ¹		
QUALIFIED TO OPERATE		
Type Vehicle and/or Equipment	Capacity	Qualifying Official
Truck, M, RT 4000LB ¹	"0"	W. Ford 6/6/83
Truck, M, RT, 6000LB ¹	"0"	W. Ford 6/6/83
Excavator, Hyd w/ATTACH ¹	"0"	W. Ford 6/6/83
Generator Set, 3 Kw-6Kw ¹	"0"	W. Ford 7/14/83
OTHER RECORDS (Optional)		
Tractor, Mud, Full Tracked ¹	"0"	W. Ford 7/14/83
Crane, RT, Hyd, 30-T w/ATTACH ¹	"0"	W. Ford 7/14/83
Tractor, Mud, Full, w/Scraper ¹	"0"	W. Ford 9/2/83
Rev. Eq. Wat. Rec. Unit ¹	"M"	W. Ford 9/2/83
* U.S. G. P. O., 1980-311-153/5951		
<p>mandatory to obtain the U.S. Government Motor Vehicle Operator's Identification Card. Solicitation of the SSN by the United States Civil Service Commission is authorized under provisions of Executive Order 9397, dated November 22, 1943. The SSN is used as an identifier throughout your federal career from the time of application through retirement.</p> <p>The SSN will be used by the National Drivers Register Service in conducting a routine check of your driving record. The SSN also will be used by the Civil Service Commission and other Federal agencies in connection with lawful requests for information about you from former employers, educational institutions, financial, law enforcement, or other organizations. The information gathered through the use of the number will be used only as necessary in personnel administration processes carried out in accordance with established regulations and published notices of systems of records. The SSN also will be used for the selection of persons to be included in statistical studies of personnel management matters. The use of the SSN is made necessary because of the large number of present and former Federal employees and applicants who have identical names and birth dates, and whose identities can only be distinguished by the SSN.</p>		

Figure 8-3. SF-46 (U.S. Government Motor Vehicle Operator's Identification Card)

Restrictions "Page 2"		
QUALIFIED TO OPERATE		
Type Vehicle and/or Equipment	Capacity	Qualifying Official
Crane, Ltr-Mtd., SP, 7 1/2 T	0"	N. Ford 9/2/83
OTHER RECORDS (Optional)		
U.S. G.P.O. 1980-311-153/5351		
<p>mandatory to obtain the U.S. Government Motor Vehicle Operator's Identification Card. Solicitation of the SSN by the United States Civil Service Commission is authorized under provisions of Executive Order 9397, dated November 22, 1943. The SSN is used as an identifier throughout your Federal career from the time of application through retirement.</p> <p>The SSN will be used by the National Drivers Register Service in conducting a routine check of your driving record. The SSN also will be used by the Civil Service Commission and other Federal agencies in connection with lawful requests for information about you from former employers, educational institutions, financial, law enforcement, or other organizations. The information gathered through the use of the number will be used only as necessary in personnel administration processes carried out in accordance with established regulations and published notices of systems of records. The SSN also will be used for the selection of persons to be included in statistical studies of personnel management matters. The use of the SSN is made necessary because of the large number of present and former Federal employees and applicants who have identical names and birth dates, and whose identities can only be distinguished by the SSN.</p>		

Figure 8-4. Additional SF-46 (U.S. Government Motor Vehicle Operator's Identification Card) - Continuation

8-3. DISQUALIFICATION. When an applicant has performed poorly or has failed to meet any of the requirements in Chapters 4 through 6, follow the procedures given in the following paragraphs.

a. Double-Check the Requirements. Refer to Table 8-1 to ensure that all required actions were taken. If Table 8-1 indicates that the applicant is in fact disqualified, use a copy of the application to notify his Commanding Officer or responsible superior, after making the appropriate entries described in paragraphs b. through f. which follow.

b. Denial Because of Failure of Physical Examination. When a medical officer has declined to certify that an applicant meets the physical requirements to operate the specified items of tactical engineer equipment, the following actions should occur. The Licensing Officer will determine if the disqualifying items are waiverable (refer to Table 8- 1). If waiverable, it is the Licensing Officer's responsibility to bring this matter to the Commander's attention and request a decision as to whether the Commander desires a waiver be granted. If not, enter the following notation in item 17, part H: "Disqualified from licensing; physical requirements. Medical certification required prior to submitting a new application."

c. Denial Because of Failure of Equipment Knowledge/Awareness Test. Enter the following notation in item 17, part II: "Not qualified. Recommend further study/training."

d. Denial Because of Failure of Skill Performance Test. Enter the following notation in item 17, part H: "Not qualified. Recommend further practice."

e. Denial Because of Recklessness, Attitude, Accident, Etc. Enter a brief description of the reason for denial of license in item 17. Part II. If it is felt the applicant should be disqualified from operating tactical engineer equipment for the Marine Corps, add the following sentence: "Recommend disqualification until applicant demonstrates proper skills and attitudes to operate equipment safely and responsibly." If disqualification is recommended in Part III, check item 22a as requiring a Page-11 SRB/OQR entry. Forward the Application for Tactical Engineer Equipment Operator's License to the Licensing Officer for the Licensing Officer's review and the Unit Commander's approval prior to requesting the SRB/OQR entries.

8-4. NOTIFICATION ACTION. In all cases, the Licensing Officer signs Part III, "License Action," then sends a copy of the application to the individual who signed item 12 of Part I. This constitutes notification to the applicant's Commanding Officer/responsible superior of the disposition of the application.

8-5. RECORDING ACTION. File copies of all documents relating to the issue or denial of license in the applicant's Tactical Engineer Equipment Operator History File.

TABLE 8-1
REQUIREMENTS NOT MET

<u>REQUIREMENT NOT MET</u>	<u>LICENSING OFFICE ACTION</u>
<p><u>Physical Standards</u></p> <ol style="list-style-type: none"> 1. Not 66" in Height 2. Is 66" in Height, but weight is not proportional 3. Visual Acuity <ol style="list-style-type: none"> a. Needs glasses/contact lenses to meet 20/20 b. Not 20/20 with glasses/contact lenses 4. Impaired color vision 5. Depth Perception Cannot read line c of the Armed Forces Vision Tester or line c of the American Optical Vectographic Slides. 	<ol style="list-style-type: none"> 1. Disqualification (Waiverable) 2. Disqualification (Waiverable) 3. <ol style="list-style-type: none"> a. "Corrective lenses required" recorded under restrictions on SF-46. b. Disqualification 4. Disqualification (Applies only to Utilities - Lights, Converters, Generators) 5. Disqualification (Applies to all categories except Utilities-Lights, Converters, Generators)
<p><u>Equipment Knowledge/Awareness</u></p>	<ol style="list-style-type: none"> 1. Inform applicant of his weak areas. 2. Notify applicant's Commanding Officer. 3. Allow retest during next 60 days.
<p><u>Skill Performance</u></p>	<ol style="list-style-type: none"> 1. Allow repetition of any test(s) where applicant misunderstood test directions. 2. Notify applicant's Commanding Officer. 3. Allow retest during next 60 days. 4. Recommend disqualification if extreme recklessness, poor attitude, etc. resulted in test failure.

CHAPTER 9 REMEDIAL PROCEDURES

9.1. GENERAL. This chapter sets forth procedures for use when an applicant's licensing status must be changed after a tactical engineer equipment operator's SF-46 has been issued. This type of situation includes revocation and suspension.

9.2. REVOCATION. Commanding Officers are authorized to revoke SF-46 licenses held by personnel in their command for tactical engineer equipment for a period of 90 days or more. Revoked SF-46S should either be destroyed or returned to the licensing office for disposition. If the Commanding Officer returns the SF-46 to the licensing office, "REVOKED UNTIL (Date)" should be written across the license and the license should be filed in the individual's Tactical Engineer Equipment Operator's History File. Complete re-testing is required before the individual becomes eligible to hold the tactical engineer equipment SF-46 again.

Revocations will be applied for the following reasons:

a. Instances of being under the influence of alcohol and controlled substances, other than those prescribed by competent medical authorities.

b. Receiving a citation or being found liable for causing a reportable accident/incident while operating an item of tactical engineer equipment requiring a licensed operator.

c. At the commander's discretion, for cause, i.e., evidence of deliberate misuse or gross disregard of the equipment or safety of personnel/equipment.

9-3. SUSPENSION. Commanding Officers may suspend licenses, for cause, for periods of up to 90 days. The individual's Commanding Officer should then confiscate the SF-46 and hold it until the suspension period has expired. The SF-46 may then be returned to the individual without formal licensing office processing. No retesting is necessary unless the Commanding Officer requires it. If retesting is required, the individual must complete and sign an application for tactical engineer equipment operator's license, Part 1, for a new license transaction.

9-4. RECORDING ACTION. The following actions should be recorded:

a. Action Date Card. If the remedial action affects an applicant's eligibility date, record the new date on the appropriate action date card and strike the obsolete entry from the existing card.

b. Tactical Engineer Equipment Operator History File. All documents related to an applicant's operating status should be maintained in the Tactical Engineer Equipment Operator's History File and all licensing actions not accounted for on the application should be recorded and explained on the front inside cover.

c. SRB/OQR Entry. Revocations by a Unit Commanding Officer require an entry on Page 11 of the individual's SRB/OQR, giving the date of revocation, the period during which the individual will not be eligible for a new SF-46 for tactical engineer equipment, and a summary of the reasons for the revocation.

APPENDIX A
TACTICAL ENGINEER EQUIPMENT REQUIRING
A LICENSE

APPENDIX A
TACTICAL ENGINEER EQUIPMENT REQUIRING
A LICENSE TO BE OPERATED

<u>ITEM</u>	<u>TAMCN</u>
EARTHMOVING	
1. Tracked	
(a) Tractor, Full-Tracked, Small w/Bullgrader	B2444
(b) Tractor, Medium, Full-Tracked	B2462
(c) Tractor, Full Tracked w/ Multipurpose Bucket	B2463
2. Wheeled	
(a) Excavator Hydraulic w/ Collateral Equipment Attachments Excavator Bucket Ditch Cleanout Bucket Multipurpose Bucket Wrist-o-Twist	B0590
(b) Grader, Road, Motorized	B1081
(c) Roller, Compactor, Vibratory	B1785
(d) Tractor, Rubber-Tired with Scraper Unit	B2468 B1925
(e) Tractor, Wheeled Industrial with Scraper, Earthmoving, Towed	B2480 B1920
(f) Scraper-Tractor, Wheeled	B1922
(g) Sweeper, Runway, Vacuum	B2126
CONSTRUCTION	
1. Saws/Edgers	
(a) Saw, Chain, One-Man Portable	B1830
(b) Saw, Radial, Overarm	B1840/B1850
(c) Edger, Sawmill	1J3096
(d) Sawmill, Circular, Electric Motor Driven	U3250

<u>ITEM</u>	<u>TAMCN</u>
2. Mixers/Crushing and Screening	
(a) Mixer, Concrete	B1325
(b) Crushing and Screening Plant	U3035
3. Bridging	
(a) Boat, Bridge Erection	B0110
4. Compressors	
(a) Compressor, Reciprocating, Power Driven, 4 CFM	B0360
(b) Compressor, Air Rotary, 250 CFM	B0390
(c) Compressor, Air Rotary, 600 CFM	U3031
5. Other	
(a) Driver Set, Projectile Ramset	B0565

MATERIAL HANDLING

1. Self-Powered	
(a) Crane, Rough Terrain, Hydraulic, 30-Ton w/Attachments	B0399
Pile Driver, Self-Powered	U3195
Bucket, Clamshell, 3/4 Yd.	B0170
(b) Crane, Wheel-Mounted, Self-Propelled, 7 1/2 Ton	B0444/B0445
(c) Crane, Wheel-Mounted, Self-Propelled, 3 Ton	U3033
(d) Tractor, Wheeled Industrial	B2464
(e) Tractor, Rubber-Tired, Articulated Steer with Attachments	B2463
Forklift 10,000 Lb.	B0646
Bucket, GP 2 1/2 Yd.	B0214
(f) Truck, Forklift, RT, 6,000 Lb.	B2560
(g) Truck, Forklift, RT, 4,000 Lb.	B2565
(h) Container Handler, RT, 50,000 Lb.	B0391
2. Towed	
(a) Lightweight Amphibious Container Handler (LACH)	U3060

ITEM

TAMCN

UTILITIES

1. Lights/Converters/Generators
 - (a) Floodlight Set B0630/B0635
 - (b) Frequency Converter B0672/B0673
 - (c) Generator Sets, 3KW-60KW 00730, 00780, B0891, 00921, 00953, B0971, B1016, B1021
 - (d) Generator Sets, 100KW-200KW B1045/B1050
 - (e) Dummy Load, Generator Set B0579
2. Other
 - (a) Laundry Unit, Trailer-Mounted B1225
 - (b) Reverse Osmosis Water Purification Unit B2604
 - (c) Water Purification Equipment Set, Mobile B2605
 - (d) Water Purification Set, Trailer-Mounted B2620
 - (e) Water Purification Unit, Frame-Mounted B2625
 - (f) Distillation Unit, Water U3080
 - (g) Bath Unit, Trailer-Mounted 00060
 - (h) Decontaminating Apparatus B0465
 - (i) DELETED

TACTICAL ENGINEER EQUIPMENT NOT
REQUIRING A LICENSE TO BE OPERATED
BUT REQUIRING SUPERVISED INSTRUCTION AND TRAINING

<u>Items of Equipment</u>	<u>TAMCN</u>
(1) Launcher, Rocket, Ground, Demo Kit	B1224
(2) Projector Set, Motion Picture, Sound, 16mm	B 1540
(3) Projector Set, Motion Picture, Sound, 35mm	B1550
(4) Recharging Unit, Carbon Dioxide	B1640
(5) Shop Equipment, Contact Maintenance, Truck-Mounted, Set No. 3	B 1 9 4 #
(6) Tool Set, Tire Removing, Hydraulic	B2380
(7) Heater, Space	U3116
(8) Drill, Pneumatic Drifter, Crawler-Mounted SP	U3090

^{1/} - Requires 5/4 Ton motor transport license to operate.

TACTICAL ENGINEER EQUIPMENT FOR WHICH
A LICENSE IS RECOMMENDED IF OPERATED
BY NON-FORMAL SCHOOL TRAINED PERSONNEL

<u>Items of Equipment</u>	<u>TAMCN</u>
(1) Military Standard Air Conditioner	B0001, B0002, B0003, B0004, 60005, 60006, 00008, B0009, B0011
(2) Ice Flake Machine, FAM-149A and 57L10-449-4	B1180
(3) Pump Reciprocating, 100 GPM	B1590
(4) Pump, 55 GPM	B1620
(5) Refrigeration Unit, ME10-M 1	B1650
(6) Refrigeration Unit, PTE 10-3	B 1660
(7) Water Distribution Equipment	B2600
(8) Welding Machine, Arc, Trailer-Mounted	B2680
(9) Pump, Deep Well Rotary	U3240

APPENDIX B
REFERENCE DOCUMENTS

1. TM 11275-15/4, Engineer Equipment License Examiner's Technical Manual
2. BUMEDINST 6260.6B
3. MCO 6260.1C
4. MCO 8023.2
5. Applicable Operator's Manuals (lowest-numbered technical manuals) on each item of tactical engineer equipment assigned to the Licensing Examiner's unit. (See Page 5-2.)
6. NAVMAT P5100

APPENDIX C
BLANK FORMS

	<u>Page</u>
Application For Tactical Engineer Equipment Operator's License	C-2, C-3
SF-46, U.S. Government Motor Vehicle Operator's Identification Card	C-4
Request For [Medical Information	C-5
Medical Evaluation Referral Memorandum	C-6
SF-217, Medical Report (Epilepsy)	C-7, C-8

Application for Tactical Engineer Equipment Operator's License

PART I APPLICATION

1. Last Name		First Name	Middle Name	2. Date of Birth (Mo./Day/Yr.)	
3. Social Security Number			4. Sex		5. Height
			M F		___ Ft. ___ In.
6. Weight		7. Color of		8. Organization	
		Eyes ___ Hair ___			
9. Date and Applicant's Signature			10. Category (Check one):		
			___ Initial ___ Renewal ___ Duplicate		
11. Item(s) of Tactical Engineer Equipment for Which Licensing is Requested:					
<u>EARTHMOVING:</u> Tractors, Full Tracked: ___ Sm. w/Bullgrader () / ___ Med. () / ___ W/Multipurpose Bucket () Tractors, Wheeled: ___ Excavator Hydraulic w/Attachs. () / ___ Grader, Road, Motorized () / ___ Roller, Compactor, Vibratory () / ___ Rubber Tired w/Scrapper Unit () / ___ Industrial w/Scrapper Unit () ___ Sweeper, Runway, Vacuum ()					
<u>CONSTRUCTION:</u> ___ Saw, Chain () ___ Saw, Radial Overarm () ___ Edger, Sawmill () ___ Sawmill, Circular () ___ Mixer, Concrete () ___ Crushing and Screening Plant () ___ Boat, Bridge Erection () Compressors: ___ 4CFM & GSE () / ___ 250 & 600 CFM () ___ Driver Set, Projectile Ramset ()					
<u>MATERIAL HANDLING:</u> Cranes: ___ Rough Terrain, Hydraulic, 30 Ton w/Attachs. () / ___ Wheel Mounted, Self-Propelled, 7½ Ton () / ___ Wheel-Mounted, Self-Propelled, 3-Ton () Tractors: ___ Wheeled Industrial () / ___ Rubber Tired, Articulated Steer w/Attachs. () Trucks: ___ Forklift, RT, 6000 lb. () / ___ Forklift, RT, 4000 lb. () ___ Lightweight Amphibious Container Handler (LACH)() ___ Container Handler, RT, 50,000 lb. ()					
<u>UTILITIES:</u> ___ Floodlight Set () ___ Frequency Converter () Generator Sets: ___ 3kW-60kW () / ___ 100kW-200kW () / ___ Dummy Load () ___ Laundry Unit, Trailer-Mounted () ___ Reverse Osmosis Water Purification Unit () ___ Water Purification Equipment Set, Mobile () ___ Water Purification Set, Trailer-Mounted () ___ Water Purification Unit, Frame Mounted () ___ Distillation Unit, Water () ___ Bath Unit, Trailer-Mounted () ___ Decontaminating Apparatus () ___ Bottle Cleaning and Charging Station, AN/TAM-4 Van ()					
12. Recommend this individual be examined for qualification to hold the SF-46 on the requested items.					
			_____ Commanding Officer's Signature		_____ Date

Front Page of Application for
Tactical Engineer Equipment Operator's License

PART II EXAMINATION RESULTS

13. Confirmation of the required physical qualifications was received on _____.									
Item of Equip.	Physical		Written		Skill		PASS	Init.	Date
	SAT	UNSAT	SAT	UNSAT	SAT	UNSAT			
14. Restriction: <input type="checkbox"/> Corrective Lenses Req. <input type="checkbox"/> Other					15. Signature of License Examiner			16. Date	
17. Remarks:									
PART III LICENSE ACTION									
18. License Issued		Yes <input type="checkbox"/> No <input type="checkbox"/>		19. License No. _____		20. Date Issued		21. Expir. Date	
22. <input type="checkbox"/> a. Tactical Engineer Equipment qualified to operate taken from information from Part II, items 13 and 14 and from Part III, items 18 through 21, should be entered on Page 11 of the subject individual's Service Record Book/Officer's Qualification Record.									
22. <input type="checkbox"/> b. Return to License Examiner. (Initials indicate completion of recording action)									
23. Signature of Licensing Officer:							24. Date		
<p>PRIVACY ACT NOTICE</p> <p>Authority: This information is provided pursuant to Public Law 93-579 (Privacy Act of 1974), December 31, 1974, for individuals being issued Standard Form 46, U.S. Government Motor Vehicle Operator's Identification Card. U.S. Code, Title 5, Section 301.</p> <p>Purposes and Uses: The purpose of SF 46 is to identify Federal employees who have been licensed by their agencies to operate specific items of Government-owned tactical engineer equipment.</p> <p>Effects of Nondisclosure: The effect of nondisclosure of the information required on the SF 46 is that an individual will not be authorized to operate Federal tactical engineer equipment. The disclosure of this information is mandatory when an employee's job requires operating Federal tactical engineer equipment and is voluntary otherwise.</p> <p>Information regarding disclosure of your Social Security Number Under Public Law 93-579 Section 7(b): Disclosure by you of your Social Security Number (SSN) is mandatory to obtain the U.S. Government Motor Vehicle Operator's Identification Card. Solicitation of the SSN by the United States Civil Service Commission is authorized under provisions of Executive Order 9397, dated November 22, 1943. The SSN is used as an identifier throughout your Federal career from the time of application through retirement. The information gathered through the use of the number will be used only as necessary in personnel administration processes carried out in accordance with established regulations and published notices of systems of records. The SSN also will be used for the selection of persons to be included in statistical studies or personnel management matters. The use of the SSN is made necessary because of the large numbers of present and former Federal employees and applicants who have identical names and birth dates, and whose identities can only be distinguished by the SSN.</p>									

Standard Form 46 Revised Jan. 1977 USCSC FPM, Chapter 93D		U.S. Government Motor Vehicle Operator's Identification Card			Card No.
Name of Operator			Sex	Date Issued	
Height	Weight	Date of Birth	Social Security No.	Date Expires	
Color of Hair Eyes		NOT TRANSFERABLE Card must be carried at all times when operating Govern- ment vehicles.	Signature of Operator (Not valid until signed)		
Name and Location of Issuing Unit			Signature and Title of Issuing Official		
The holder of this card is qualified to operate U.S. Government vehicles and/or equipment specified, subject to the restrictions set forth on the reverse of this card.					
46-1D5					
PRIVACY ACT NOTICE					
<p>Authority: This information is provided pursuant to Public Law 93-579 (Privacy Act of 1974), December 31, 1974, for individuals being issued Standard Form 46, U.S. Government Motor Vehicle Operator's Identification Card, U.S. Code, Title 5, section 301.</p> <p>Purposes and Uses: The purpose of SF 46 is to identify Federal employees who have been authorized by their agencies to operate Government-owned motor vehicles.</p> <p>Effects of Nondisclosure: The effect of nondisclosure of the information required on the SF 46 is that an individual will not be authorized to drive a Federal motor vehicle. Failure to disclose accurate information that results in a negative reply from the National Drivers Register Service can result in revocation of an issued operator's identification card. The disclosure of this information is mandatory when an employee's job requires driving a Federal motor vehicle and is voluntary otherwise.</p> <p>Information Regarding Disclosure of Your Social Security Number Under Public Law 93-579 Section 7 (b): Disclosure by you of your Social Security Number (SSN) is <i>(continued on reverse)</i></p>					

Restrictions		
QUALIFIED TO OPERATE		
Type Vehicle and/or Equipment	Capacity	Qualifying Official
OTHER RECORDS (Optional)		
U.S. G.P.O. 1980-311-153/5351		
<p>mandatory to obtain the U.S. Government Motor Vehicle Operator's Identification Card. Solicitation of the SSN by the United States Civil Service Commission is authorized under provisions of Executive Order 9397, dated November 22, 1943. The SSN is used as an identifier throughout your Federal career from the time of application through retirement.</p> <p>The SSN will be used by the National Drivers Register Service in conducting a routine check of your driving record. The SSN also will be used by the Civil Service Commission and other Federal agencies in connection with lawful requests for information about you from former employers, educational institutions, financial, law enforcement, or other organizations. The information gathered through the use of the number will be used only as necessary in personnel administration processes carried out in accordance with established regulations and published notices of systems of records. The SSN also will be used for the selection of persons to be included in statistical studies of personnel management matters. The use of the SSN is made necessary because of the large number of present and former Federal employees and applicants who have identical names and birth dates, and whose identities can only be distinguished by the SSN.</p>		

SF-46 (U.S. Government Motor Vehicle Operator's Identification Card)

Memorandum

FROM: LICENSING OFFICER

Date:

TO: MEDICAL OFFICER

SUBJ: _____, Medical Evaluation of

Subject individual has applied for a Tactical Engineer Equipment Operator's License (SF-46). Current regulations specify the following physical requirements for licensing approval:

	Yes	No		
() Vision correctable to 20/20	_____	_____	With glasses/ contact lenses	_____
() Normal color perception	_____	_____		
() Height (66") and Weight proportional	_____	_____		
() Depth perception (must be able to read through line C of Armed Forces Vision Tester or line 3 of the American Optical Vectographic Slides.	_____	_____		

Request you review latest physical examination to verify the above physical standards for which there is an (X) marked. Please confirm these physical requirements have been met by initialling in either the "Yes" or "No" space beside each physical requirement and signing below.

Licensing Officer's Signature

FROM: MEDICAL OFFICER

Date:

TO: LICENSING OFFICER

SUBJ: _____, Medical Evaluation of

Requested medical evaluation has been complied with as indicated above.

Medical Officer's Signature

REQUEST FOR MEDICAL INFORMATION

Memorandum

FROM: LICENSING OFFICER

Date:

TO: MEDICAL OFFICER

SUBJ: _____, Medical Evaluation of

Subject individual currently holds a Tactical Engineer Equipment Operator's/Mechanic's License (SF-46) for the following categories of tactical engineer equipment

_____.

The physical standards required of applicants seeking a tactical engineer equipment operator's/mechanic's license are provided in Table IV-1, which is attached to this memo.

Subject individual has been experiencing the following physical problems: _____

_____.

A medical officer's evaluation of the subject individual's ability to safely operate the above mentioned categories of tactical engineer equipment is requested. Based upon this evaluation, make a recommendation for or against continued operation of the equipment by initialling in one of the boxes below.

- The operator's physical condition could hamper his/her ability to operate the categories of tactical engineer equipment listed above. I recommend operation of this equipment by the operator be discontinued.
- The operator's physical condition should NOT hamper his/her ability to operate the categories of tactical engineer equipment listed above. I recommend operation of this equipment by the operator be continued.

Licensing Officer's Signature

FROM: MEDICAL OFFICER

Date:

TO: LICENSING OFFICER

SUBJ: _____, Medical Evaluation of

Requested medical evaluation has been complied with as indicated above.

Medical Officer's Signature

TO BE GIVEN TO PERSON
EXAMINED WITH A PRE-
ADDRESSED "MEDICALLY
CONFIDENTIAL" ENVELOPE.

UNITED STATES CIVIL SERVICE COMMISSION

FORM APPROVED
O.M.B. No. 50-R0337

MEDICAL REPORT (EPILEPSY)

PART A—TO BE COMPLETED BY AGENCY

NOTE: See FPM Chapter 339 and FPM Supplement 339-31 for disposition and/or filing of this form

1. NAME OF APPLICANT (Last) (First) (Middle initial)		2. DATE OF BIRTH (Mo., Day, Yr.)	
3. ADDRESS (Including ZIP Code)		4. TITLE OF POSITION	
5. MOTOR VEHICLE OPERATOR (Answer 5(a) through 5(k) if this is the position applied for.)			
5(a) TYPE OF VEHICLE AND LOAD CAPACITY	5(b) AMOUNT OF DRIVING (Hours per day)	5(c) IS DAYTIME DRIVING REQUIRED? <input type="checkbox"/> YES <input type="checkbox"/> NO	5(d) IS NIGHT DRIVING REQUIRED? <input type="checkbox"/> YES <input type="checkbox"/> NO
5(e) CURRENT STATE DRIVERS LICENSE STATE: LICENSE NUMBER:	5(f) IS DRIVING REQUIRED ON CONGESTED HIGHWAYS OR DURING PEAK TRAFFIC HOURS? <input type="checkbox"/> YES <input type="checkbox"/> NO If "yes", please describe.		
5(g) DOES APPLICANT HAVE GOOD DRIVING AND SAFETY RECORD? <input type="checkbox"/> YES <input type="checkbox"/> NO If "no," give record of offenses and dates.			

6. OTHER POSITIONS (Answer 6(a) through 6(b) if position applied for is other than Motor Vehicle Operator.)

6(a). DUTIES OF POSITION NAMED IN ITEM 4. (Describe fully)

6(b). HAZARDOUS CONDITIONS OR SITUATIONS INVOLVED IN POSITION. (Describe fully)

7. SIGNATURE OF AGENCY OFFICIAL	9. AGENCY ADDRESS
8. DATE	

PART B—TO BE COMPLETED BY APPLICANT

DATE OF LAST SEIZURE	SIGNATURE
----------------------	-----------

EXAMINING PHYSICIAN Report on other side

217-101

Standard Form 217 (2-73)
U.S. Civil Service Commission
FPM Supplement 339-31

PART C--TO BE COMPLETED BY EXAMINING PHYSICIAN

The purpose of this report is to secure medical evidence concerning the physical ability of this individual to perform the duties of the Federal position described on the other side of this form. Based on the information you furnish, a Federal medical officer must determine the following:

- (a) is the applicant physically capable of performing the duties of the position efficiently?
- (b) would employment be hazardous to the applicant or others?

Considerable weight will be given to your findings in this case from the standpoint of the present status of the individual, prognosis, and recommendations as to employability in the position described.

Any fee in connection with rendering a report on this form is usually paid by the person under consideration. In any case where the fee is to be paid by the government, this report form will be accompanied by an appropriate separate voucher form.

1. DATE OF ONSET OF SEIZURES	2. TYPE OF SEIZURE <input type="checkbox"/> GENERALIZED TONIC-CLONIC (<i>Grand Mal</i>) <input type="checkbox"/> ABSENCE (<i>Petit Mal</i>) <input type="checkbox"/> COMPLEX PARTIAL (<i>Psychomotor</i>) <input type="checkbox"/> OTHER (<i>Describe</i>)													
3. MEDICATION OR TREATMENT GIVEN (<i>kind and amount</i>)		4. DOES APPLICANT TAKE MEDICATION AS PRESCRIBED? <input type="checkbox"/> YES <input type="checkbox"/> NO												
5. PRIOR TO TREATMENT -- FREQUENCY OF SEIZURES: SEVERITY OF SEIZURES:		6. EFFECT OF TREATMENT ON -- FREQUENCY OF SEIZURES: SEVERITY OF SEIZURES:												
7. DATE OF LAST SEIZURE	8. IS THERE ANY EVIDENCE OF MENTAL DETERIORATION? <input type="checkbox"/> YES <input type="checkbox"/> NO	9. IS THIS PERSON UNDER CONTINUING MEDICAL CARE? <input type="checkbox"/> YES <input type="checkbox"/> NO												
10. DOES APPLICANT MAKE REGULAR VISITS TO PHYSICIAN? <input type="checkbox"/> YES <input type="checkbox"/> NO		11. FREQUENCY OF VISITS:												
12. PATTERN OF OCCURRENCE <table border="1" style="display: inline-table; border-collapse: collapse;"> <thead> <tr> <th></th> <th>YES</th> <th>NO</th> </tr> </thead> <tbody> <tr> <td>NOCTURNAL</td> <td style="width: 30px; height: 20px;"></td> <td style="width: 30px; height: 20px;"></td> </tr> <tr> <td>DIURNAL</td> <td style="width: 30px; height: 20px;"></td> <td style="width: 30px; height: 20px;"></td> </tr> <tr> <td>PHOTIC PRECIPITATED</td> <td style="width: 30px; height: 20px;"></td> <td style="width: 30px; height: 20px;"></td> </tr> </tbody> </table>			YES	NO	NOCTURNAL			DIURNAL			PHOTIC PRECIPITATED			13. IS THERE ANY DROWSINESS OR OTHER SIDE EFFECTS OF MEDICATION? <input type="checkbox"/> YES <input type="checkbox"/> NO <i>If "yes", describe fully and note if this has been supported by blood level determinations.</i>
	YES	NO												
NOCTURNAL														
DIURNAL														
PHOTIC PRECIPITATED														
14. RECOMMENDATION OF PHYSICIAN AS TO EMPLOYABILITY. DO YOU RECOMMEND THIS INDIVIDUAL FOR EMPLOYMENT IN THE POSITION SHOWN? <input type="checkbox"/> YES <input type="checkbox"/> NO SPECIFY ANY GENERAL LIMITATIONS AS TO WORK CAPACITY RELATIVE TO PHYSICAL DEMANDS OR ENVIRONMENTAL CONDITIONS.														
15. EXAMINING PHYSICIAN'S NAME (<i>Type or print</i>)		16. SIGNATURE OF EXAMINING PHYSICIAN <hr style="width: 80%; margin: 0 auto;"/> <div style="display: flex; justify-content: space-between; width: 80%; margin: 0 auto;"> (Signature) (Date) </div>												
17. ADDRESS OF PHYSICIAN (<i>Number, Street, City, State and ZIP Code</i>)		<p>IMPORTANT: After signing, return the entire form intact in the preaddressed "Medically Confidential" envelope which the person you examined gave you.</p>												

APPENDIX D
REPRESENTATIVE WRITTEN EQUIPMENT KNOWLEDGE
(AWARENESS/SAFETY) TESTS

(A listing of the representative written equipment knowledge (awareness/safety) tests appears in the Table of Contents, page v.)

BATH UNIT, TRAILER-MOUNTED

TAM B0060

NSN 4510-00-763-1082

ID 00848D

NSN 4510-00-893-0685

ID 00848C

OPERATOR KNOWLEDGE (AWARENESS/SAFETY) TEST

NAME:	_____	<u>SUMMARY</u>
ORGANIZATION:	_____	0-6 Wrong Satisfactory ()
DATE:	_____	7 or more Wrong Unsatisfactory ()

INSTRUCTIONS

The following items test your knowledge of the Trailer-Mounted Bath Unit's capabilities, characteristics, and related safety considerations. For those 20 questions whose question numbers are circled, read each answer and place a check in the parenthesis () next to the most correct answer. Disregard those questions whose question numbers have not been circled.

-
1. When filling the bath unit's fuel tank, you should:
 - () a. Always provide a non-metallic contact between the fuel container and the fuel tank to avoid the danger of electrical current flows.
 - () b. Never provide a non-metallic contact between the fuel container and the fuel tank as it will short-out the electrical powered fuel gauge.
 - () c. Always provide a metallic contact between the fuel container and the fuel tank to avoid the danger of generating a spark.
 - () d. None of the above.
 2. When installing the bath unit for indoor operation, you should:
 - () a. Not operate the unit until the engine exhaust has been piped outside the building.
 - () b. Only burn diesel fuel, since it produces no carbon dioxide.
 - () c. Not operate the unit until the engine and burner exhaust gases have been piped outside the building.
 - () d. None of the above.
 3. To clean the filtering element of the air cleaner, you:
 - () a. Remove it from the air cleaner and gently tap it on a clean, solid surface.
 - () b. Remove the entire unit from the carburetor and flush it with an approved solvent while the oil cup is detached.
 - () c. Replace the entire air cleaner unit with a new unit.
 - () d. None of the above.

4. Daily lubrication is required for:
- a. The blower shaft bearings and engine crankcase.
 - b. The wheel bearings and spring shackle pins.
 - c. The blower shaft bearings and wheel bearings.
 - d. None of the above.
5. The bath unit should be relubricated:
- a. More frequently to suit abnormal operating conditions.
 - b. After washing.
 - c. After fording.
 - d. All of the above.
6. When the bath unit is in operation:
- a. The boiler relief valve must be inactivated.
 - b. At least one of the shower shut-off valves must be open at all times.
 - c. All shower shut-off valves should be closed except when personnel are showering.
 - d. None of the above.
7. The carburetor idle needle valve:
- a. Is used to adjust the flow of fuel to the engine for low-speed operation.
 - b. Has no effect on fuel flow during high-speed operation.
 - c. Should, after the original adjustment, not need further adjustment.
 - d. All of the above.
8. If burner fuel should fail to ignite after the main burner fuel supply valve has been opened, you should:
- a. Purge the boiler.
 - b. Make another attempt, within 10 seconds, to start the burner.
 - c. Note the water temperature and then attempt to start the burner.
 - d. None of the above.
9. The water pump can be operated without water in the pumping chamber:
- a. For periods not to exceed 3 minutes.
 - b. For periods not to exceed 5 minutes.
 - c. Only during scheduled maintenance actions.
 - d. None of the above.

10. If during the first few minutes of operation you observe condensation dripping from the bottom of the boiler, you should:
- a. Assume this to be an indication of boiler leakage.
 - b. Not become concerned. This is a normal occurrence.
 - c. Note this occurrence on your daily operations form.
 - d. None of the above.
11. During the time the boiler is being filled, the boiler petcock must:
- a. Remain open until exhaust is seen discharging through the petcock.
 - b. Remain closed until exhaust is seen discharging through the petcock.
 - c. Remain open until water is seen discharging through the petcock.
 - d. Remain closed until water is seen discharging through the petcock.
12. The burner fuel system has been designed to operate with:
- a. Number 1, 2, or 3 U.S. fuel oil.
 - b. Diesel fuels and lubricated gasoline.
 - c. Lubricated kerosene.
 - d. All of the above.
13. In extremely cold temperatures the following should not be used:
- a. Heavy black oils.
 - b. The light fuels (No. 1 and No. 2 U.S. fuel oil).
 - c. Lubricated gasoline.
 - d. Lubricated kerosene.
14. If one of the bath unit's fuel tanks should develop a leak:
- a. The unit will be totally inoperative.
 - b. The suction and return valves in the fuel lines to that tank must be closed, and the tank drained.
 - c. The boiler unit should be inspected for contamination.
 - d. All of the above.
15. For preventive maintenance purposes, the bath unit's weekly interval will be:
- a. As designated by the local commander.
 - b. Each calendar week.
 - c. A calendar week, or 60 hours of use, whichever occurs first.
 - d. Disregarded.

16. The trailer-mounted bath unit's engine is:
- a. A two cylinder, four cycle, air-cooled 6.5 horsepower engine.
 - b. A four cylinder, two cycle, air-cooled 22.5 horsepower engine.
 - c. A single cylinder, four cycle, air-cooled engine.
 - d. None of the above.
17. The bath unit's engine has been designed to operate with:
- a. Lubricated kerosene.
 - b. Gasoline (74 or higher octane rating).
 - c. Diesel fuel.
 - d. Fuel oil (No. 1, 2, or 3).
18. The bath unit's water temperature is primarily maintained at the desired level by:
- a. The automatic water temperature regulating valve.
 - b. The operator's hand-set thermostat adjustments.
 - c. The fuel pressure regulator.
 - d. None of the above.
19. Efficient and complete combustion of the burner unit's fuel is accomplished by:
- a. Restricting the fuel to only high-test gasoline.
 - b. Prewarming the burner unit's fuel.
 - c. Selective time spacing of the ignition spark.
 - d. Forcing fuel to the burners at a pressure of 100 pounds per square inch.
20. Engine fuel feed, from the fuel tank, is insured by:
- a. Pressure.
 - b. Suction.
 - c. Gravity.
 - d. None of the above.
21. Immediately after starting the engine and prior to opening the fuel supply valves, the operator visually checks the inspection window in the left side of the burner assembly to:
- a. Insure a regular flow of fuel is arriving in the burner assembly.
 - b. See if there is a steady (continuous) spark visible.
 - c. Confirm the burner fuel pump pressure guage is indicating 100 pounds per square inch.
 - d. All of the above.

22. The magneto ignition switch is used:
- a. To shut down the engine.
 - b. To start the engine.
 - c. To re-set the timing of the ignition firing.
 - d. None of the above.
23. When operating, the hot water is moved into the shower assembly by:
- a. Gravity feed.
 - b. Suction.
 - c. Oil pressure.
 - d. Water pump pressure forcing cold water into the boiler.
24. The bath unit's heated water output is about:
- a. 12 gallons per minute.
 - b. 24 gallons per minute.
 - c. 36 gallons per minute.
 - d. 48 gallons per minute.
25. When positioning the bathing unit, you should locate it:
- a. As close as possible to the water supply.
 - b. So that it has a maximum water suction lift of 15 feet.
 - c. So that waste water cannot drain back into the supply near the suction inlet.
 - d. All of the above.

Correct Responses - Bath Unit, Trailer-Mounted, Operator Test

- | | | |
|------|-------|-------|
| 1. c | 9. d | 17. b |
| 2. c | 10. b | 18. a |
| 3. b | 11. c | 19. d |
| 4. a | 12. d | 20. c |
| 5. d | 13. a | 21. b |
| 6. b | 14. b | 22. a |
| 7. d | 15. c | 23. d |
| 8. a | 16. c | 24. c |
| | | 25. d |
-

BOAT, BRIDGE ERECTION

TAM B0110

NSN 1940-00-915-0079

ID 00853C

NSN 1940-00-809-4472

ID 00853B

OPERATOR KNOWLEDGE (AWARENESS/SAFETY) TEST

NAME:	_____	<u>SUMMARY</u>
ORGANIZATION:	_____	0-6 Wrong Satisfactory ()
DATE:	_____	7 or more Wrong Unsatisfactory ()

INSTRUCTIONS

The following items test your knowledge of the Bridge Erection Boat's capabilities, characteristics, and related safety considerations. For those 20 questions whose question numbers are circled, read each answer and place a check in the parenthesis () next to the most correct answer. Disregard those questions whose question numbers have not been circled.

-
1. Before attempting to start either engine, the blowers should:
 - a. Never be run.
 - b. Be run for 2 minutes in cold weather (32° Fahrenheit and colder).
 - c. Be run for 30 seconds.
 - d. Be run for at least 5 minutes.
 2. When attempting to start either engine, the starter button should not:
 - a. Be engaged for less than 30 seconds.
 - b. Be engaged for more than 30 seconds.
 - c. Be engaged for less than 60 seconds.
 - d. Be engaged for more than 60 seconds.
 3. The following combination of batteries could be found in the bridge erection boat.
 - a. One 24-volt or two 12-volt batteries connected in parallel per engine.
 - b. One 24-volt or two 12-volt batteries connected in series per engine.
 - c. One 12-volt or two 6-volt batteries connected in series per engine.
 - d. One 12-volt or two 6-volt batteries connected in parallel per engine.
 4. The propeller shaft should always be disconnected from the engine before:
 - a. Launching the boat.
 - b. Hoisting the boat from the water.
 - c. Launching or hoisting the boat from the water.
 - d. None of the above.

5. When approaching a dock, buoy, or operating in close quarters, reverse gear will be used for stopping.
- a. Habitually.
 - b. As operator judgment requires.
 - c. Under conditions of reduced visibility.
 - d. Never.
6. Denatured alcohol is added to each full tank of gasoline:
- a. Prior to scheduled maintenance.
 - b. For cold weather operation.
 - c. To increase the moisture content in the gasoline.
 - d. Never.
7. Turning the paralleling switch on:
- a. Allows drawing power from one set of batteries at a time.
 - b. Increases the available battery voltage while holding the amperage constant.
 - c. Permits the use of all batteries for starting each engine.
 - d. None of the above.
8. If the boat's engines overheat, they should be:
- a. Shut off and not restarted until the overheating cause has been located.
 - b. Run until the heat exchanger has lowered the temperature to the safe range.
 - c. Run until the cause of overheating has been located and corrected.
 - d. Shut off until the cause of overheating has been located and corrected.
9. The bridge boat's carbon dioxide fire extinguisher is suitable for use on:
- a. Electrical but not flammable liquid fires.
 - b. Flammable liquid but not electrical fires.
 - c. Electrical and flammable liquid fires.
 - d. None of the above.
10. During daily preventive maintenance services, the batteries electrolyte level should be:
- a. Filled to a level $\frac{3}{8}$ inch above the plates.
 - b. Filled to a level to the top of the plates.
 - c. Filled to a level $\frac{3}{8}$ inch below the plates.
 - d. Ignored since the batteries are dry-cells.

11. When servicing the bridge boat's batteries:
- a. Open flames are dangerous but smoking is permitted in their vicinity.
 - b. Smoking is dangerous but open flames are permitted in their vicinity.
 - c. Both smoking and open flames are allowed in their vicinity.
 - d. Neither smoking nor open flames are permitted in their vicinity.
12. During boat operation, life preservers must be worn by:
- a. All passengers aboard the boat.
 - b. Only unlicensed boat operators.
 - c. Only unlicensed boat operators and passengers.
 - d. All personnel aboard the boat.
13. When docking a pushed object, you should:
- a. Maneuver the stern of the pushed object alongside the dock first and secure it in position before maneuvering the forward portion of the pushed object to the dock.
 - b. Approach at right angles (perpendicular) to the dock.
 - c. Whenever possible, work with the current and/or wind, not into them.
 - d. None of the above.
14. Hot weather and salt-water operation of the bridge boat are similar in that:
- a. Each causes corrosion and rust to form less readily than under normal operating conditions.
 - b. The engine hatch covers should be left open in each case.
 - c. The slow rate of corrosion and rust development allow postponing normal cleaning, repainting, and application of rust preventives.
 - d. None of the above.
15. Caution must be exercised not to overfill the fuel tanks during hot weather because:
- a. Fuel expands with heat and it could cause fuel leaks that would result in fire hazards.
 - b. The overflow valves are frequently fouled with debris.
 - c. Overfilling will increase the likelihood of undesired condensation, fouling the fuel with water.
 - d. None of the above.

16. Coupling the bow and stern sections of the bridge erection boat is a two person operation. They position themselves:
- a. Both in the stern section.
 - b. One man on the deck at the rear of the bow section and the other man in the hatch at the rear of the bow section.
 - c. One man on the deck at the front of the bow section and the other man in the hatch at the rear of the bow section.
 - d. None of the above.
17. For cold weather operation, the operator should:
- a. Check the bilge pump and sump pump for ice, thawing them out with hot water, if necessary.
 - b. Keep the fuel tanks full to prevent condensation and accumulation of water in the fuel tank and lines.
 - c. Station a man on the bow to fend off floating ice with the boat hook.
 - d. All of the above.
18. In case of engine failure in swift currents, the helmsman must:
- a. Sound the distress signal immediately.
 - b. Be prepared to drop the anchor immediately.
 - c. Start his bilge and sump pumps.
 - d. None of the above.
19. After adding water to the bridge erection boat's batteries in freezing weather, the operator should:
- a. Place a written warning tag on the battery indicating the amount of added water.
 - b. Insure the paralleling switch is not used when starting the boat after adding the water.
 - c. Run the engine a minimum of one hour.
 - d. All of the above.
20. The operator insures the boat receives its quarterly preventive maintenance services. A quarterly interval is:
- a. Three calendar months or 250 hours of operation, whichever occurs first.
 - b. Three calendar months.
 - c. Every 400 operating hours.
 - d. None of the above.

21. To move the boat in a hard power turn to port, the operator would place the throttle positions as follows:
- a. Port throttle at half, starboard throttle at full.
 - b. Port throttle at full, starboard throttle at half.
 - c. Port throttle at half, starboard throttle at idle.
 - d. Port throttle at idle, starboard throttle at half.
22. The bridge erection boat normally will be used to:
- a. Tow rafts astern since this provides maximum crew safety.
 - b. Push rafts since this method provides the maximum stability and maneuverability.
 - c. Tow rafts alongside since this allows the operator to retain absolute control over the towed object.
 - d. None of the above.
23. When getting under way after being adrift, the operator should:
- a. Push the starboard engine reverse crank to its extreme forward position, turn the rudder half port, and leave the port engine reverse crank lever in neutral.
 - b. Push the port engine reverse crank to its extreme forward position, turn the rudder half starboard, and leave the starboard engine reverse crank in neutral.
 - c. First, take soundings or probe around the edges of the boat with a boat hook to determine if the boat is in open water or grounded.
 - d. None of the above.
24. Which of the following would the boat's operator not do during salt-water operation?
- a. Close the engine hatch covers to protect the engines from salt-water spray.
 - b. Examine the hull frequently for signs of corrosion.
 - c. Examine and wipe the accessories clean at frequent intervals.
 - d. None of the above.
25. When cranking the engines with a handcrank, you should keep the thumb and fingers on the same side of the crank to:
- a. Maintain a better grip on the crank.
 - b. To prevent pinching your thumb or fingers between the bulkhead and the crank.
 - c. To avoid a broken thumb or wrist in the event the engine kicks.
 - d. All of the above.

Correct Responses - Boat, Bridge Erection, Operator Test

- | | | | | | |
|----|---|-----|---|-----|---|
| 1. | d | 9. | c | 17. | d |
| 2. | b | 10. | a | 18. | b |
| 3. | c | 11. | d | 19. | c |
| 4. | c | 12. | d | 20. | a |
| 5. | a | 13. | b | 21. | a |
| 6. | b | 14. | d | 22. | b |
| 7. | c | 15. | a | 23. | c |
| 8. | d | 16. | b | 24. | d |
| | | | | 25. | c |
-

COMPRESSOR, ROTARY

TAM U3031

NSN 4310-00-382-6700

ID 06133C

NSN 4310-00-803-5880

ID 06133B

OPERATOR Knowledge (AWARENESS/SAFETY) TEST

NAME:	_____	<u>SUMMARY</u>
ORGANIZATION:	_____	0-6 Wrong Satisfactory ()
DATE:	_____	7 or more Wrong Unsatisfactory ()

INSTRUCTIONS

The following items test your knowledge of the rotary compressor's capabilities, characteristics, and related safety considerations. For those 20 questions whose question numbers are circled, read each answer and place a check in the parenthesis) next to the most correct answer. Disregard those questions whose question numbers have not been circled.

-
1. The 600 cubic foot per minute rotary compressor can be towed safely:
 - a. At speeds of up to 20 miles per hour over graded and paved roads.
 - b. At speeds of 5-15 miles per hour while moving cross-country across rough terrain.
 - c. Only on grades of 15 degrees or less.
 - d. All of the above.
 2. The power for starting the rotary compressor's engine is furnished by:
 - a. Four 6-volt, lead acid type, storage batteries connected in series.
 - b. Four 6-volt, lead acid type, storage batteries connected in series-parallel.
 - c. Four 12-volt, lead acid type, storage batteries connected in series.
 - d. Four 12-volt, lead acid type, storage batteries connected in series-parallel.
 3. When installing the rotary compressor unit outdoors, the unit should:
 - a. Be placed as close to the work site as possible.
 - b. Be located on firm ground, when possible.
 - c. Be located on ground with a slope of 15 or fewer degrees.
 - d. All of the above.

4. When installing the rotary compressor unit indoors, you must:
- a. Brace the unit, in a corner, against two walls to reduce oscillations.
 - b. Never operate the compressor unless the exhaust gases are piped outside.
 - c. Replace the lubricant with a SAE 40-weight lubricant.
 - d. None of the above.
5. After successfully starting the rotary compressor unit, automatic shutdown occurs. Before the engine is re-started, you must:
- a. Drain the fuel tanks.
 - b. Close all side curtains and check that the front grille door is clamped in place.
 - c. Determine the cause and correct it. Then the air shutdown valve must be manually set in the open position.
 - d. None of the above.
6. The rotary compressor's primary engine speed control is:
- a. Self-adjusting, varying over the range of approximately 1000 to 1800 revolutions per minute.
 - b. Manually adjusted based on the demand for compressed air.
 - c. Self-adjusting, but only in the range of approximately 300-750 revolutions per minute.
 - d. None of the above.
7. Between tasks that require the use of compressed air, you should:
- a. Try to retain pressure in the air receiver to economize on fuel requirements.
 - b. Not permit the rotary compressor to stand idle with air pressure in the air receiver. Starting a vane-type compressor against back pressure of air in the cylinder can damage the compressor.
 - c. Insure the blowdown valve remains closed.
 - d. None of the above.
8. Operator's checks and services are performed on the rotary compressor unit:
- a. Before operation.
 - b. During operation.
 - c. After operation.
 - d. Weekly.
 - e. All of the above.

9. The Ether Injection Lever:
- a. Is manually activated.
 - b. Causes ether to be injected into the engine air intake.
 - c. Is used when ambient temperature drops below 40 degrees Fahrenheit.
 - d. All of the above.
10. If the engine on the rotary compressor unit fails to start within 30 seconds after you press the start button, you should:
- a. Note this on the daily operations report.
 - b. Insure all air service valves are closed and attempt to start again.
 - c. Release the start button and wait 2 or 3 minutes to allow the starting motor to cool.
 - d. All of the above.
11. When the rotary compressor's engine stops, the blowdown valve should automatically:
- a. Vent the air pressure from the air receiver.
 - b. Vent the air pressure from the safety valve.
 - c. Close, maintaining the accumulated air pressure.
 - d. Do none of the above.
12. When operating the rotary compressor in cold weather, you should:
- a. Partially open the fuel tank caps to equalize the pressure.
 - b. Keep the fuel tank full at all times to avoid condensation.
 - c. Remove the ether injection unit and place it in temporary storage.
 - d. All of the above.
13. Which of the following compressor unit items requires lubrication every 8 hours:
- a. The wheel bearings and oil reservoir filler.
 - b. The steering arm and tie-rod.
 - c. The tie-rod and wheel bearings.
 - d. The throttle control linkage.
14. If you plan to operate the rotary compressor, and air service hoses are to be used, you should:
- a. Make the connections after starting the engine.
 - b. Insure all air service valves are closed before starting the engine.
 - c. Make all connections before starting the engine.
 - d. None of the above.

15. Oil serves several important functions in the compressor oil system. These include:
- a. Sealing and lubricating.
 - b. Cooling and lubricating.
 - c. Lubricating and cleaning.
 - d. Sealing, lubricating, and cooling.
16. The 600 cubic foot per minute rotary compressor provides air service outlets to accommodate:
- a. One 4 3/4-inch air hose and two 2-inch air hoses.
 - b. Two three-quarter inch air hoses and four 2-inch hoses.
 - c. Four three-quarter inch air hoses and two 2-inch hoses.
 - d. None of the above.
17. The mechanical parking brake is designed to hold the rotary compressor on grades up to:
- a. 5 percent.
 - b. 15 percent.
 - c. 25 percent.
 - d. 35 percent.
18. All rotary compressor operating controls and instruments are located on the instrument panel except:
- a. The air pressure gage.
 - b. The throttle control.
 - c. The panel lamp switch.
 - d. The main power switch.
19. Extreme precautions must be taken with the exhaust gases from the compressor since they contain carbon monoxide. Carbon monoxide is:
- a. poisonous.
 - b. Colorless.
 - c. Odorless.
 - d. All of the above.
20. When towing the rotary compressor over rough terrain, you should not exceed towing speeds of:
- a. 5 miles per hour.
 - b. 10 miles per hour.
 - c. 15 miles per hour.
 - d. 20 miles per hour.

21. Air intake volume and the speed of the engine are controlled by:
- a. The amount of compressed air in the air receiver.
 - b. The blowdown valve that discharges excess air back to the atmosphere.
 - c. The ether container.
 - d. All of the above.
22. The air receiver provides two major functions:
- a. Compression and demisting.
 - b. Air storage and demisting.
 - c. Air storage and compression.
 - d. All of the above.
23. The rotary compressor control that disconnects the batteries from the remainder of the electrical system during charging of the batteries from an external source is the:
- a. Master switch.
 - b. Lamp switch.
 - c. Ammeter.
 - d. None of the above.
24. The control that allows the air receiver to be manually vented is the:
- a. Air shutdown valve latch.
 - b. Safety relief valve lever.
 - c. Engine air restriction gage.
 - d. None of the above.
25. If, when the compressor's engine stops, blowdown does not occur, the operator should:
- a. Do nothing. This is a normal occurrence.
 - b. Turn the master switch off and close the side curtains.
 - c. Open an air service valve until the air pressure gage indicates zero pressure.
 - d. Do none of the above.

Correct Responses - Compressor, Rotary, Operator Test

- | | | |
|------|-------|-------|
| 1. a | 9. d | 17. b |
| 2. d | 10. c | 18. d |
| 3. d | 11. a | 19. d |
| 4. b | 12. b | 20. a |
| 5. c | 13. d | 21. a |
| 6. a | 14. c | 22. b |
| 7. b | 15. d | 23. a |
| 8. e | 16. c | 24. b |
| | | 25. c |
-

CRANE, ROUGH TERRAIN, HYDRAULIC, 30-TON
TAM B0399 NSN 3810-01-025-4782 ID 07847A
OPERATOR KNOWLEDGE (AWARENESS/SAFETY) TEST

NAME: _____	<u>SUMMARY</u>
ORGANIZATION: _____	0-6 Wrong Satisfactory ()
DATE: _____	7 or more Wrong Unsatisfactory ()

INSTRUCTIONS

The following items test your knowledge of the 30-ton, rough terrain, wheel-mounted crane's capabilities, characteristics, and related safety considerations. For those 20 questions whose question numbers are circled, read each answer and place a check in the parenthesis () next to the most correct answer. Disregard those questions whose question numbers have not been circled.

-
1. The engine that supplies power for the carrier operation:
 - a. Is more powerful than the engine that supplies power for the crane operation.
 - b. Is less powerful than the engine that supplies power for the crane operation.
 - c. Is the same engine that supplies power for the crane operation.
 - d. None of the above.

 2. The daily services to be performed by the operator include:
 - a. Inspecting the fuel and coolant levels.
 - b. Inspecting the coolant and oil levels.
 - c. Inspecting the fuel and oil levels.
 - d. All of the above.

 3. The forward/reverse selector level must be in the neutral position to start the vehicle and it can:
 - a. Never be moved while the carrier is in motion.
 - b. Be moved while the carrier is in motion in the low range.
 - c. Be moved while the carrier is in motion in both the low and high range.
 - d. None of the above.

4. The accelerator lock lever permits the operator to lock the accelerator at any desired speed, leaving the right foot free for other operation. When driving, the accelerator lock should be engaged:
- a. Only on highways.
 - b. Never.
 - c. To conserve fuel.
 - d. Only in the high range.
3. To start the 30-ton crane's engine, you should:
- a. Place all controls in neutral.
 - b. Turn the ignition switch on and check the warning lights.
 - c. Press the starter button for up to 30 continuous seconds.
 - d. All of the above.
6. If, within 10 to 15 seconds after engine start, there is no transmission or engine oil pressure indicated, you should:
- a. Note this on your daily operator's report so the gages can be replaced at the next scheduled maintenance period.
 - b. Continue operations but restrict load lifts to two-thirds of rated capacity.
 - c. Stop the engine and investigate the cause.
 - d. Operate the engine at part throttle and no load for 10 minutes, periodically observing the gages.
7. When traveling on public roads, you may safely select the following steering:
- a. 2-wheel.
 - b. 4-wheel.
 - c. Crab.
 - d. All of the above.
8. The outriggers should be used in 30-ton crane operations:
- a. Habitually.
 - b. In unstable soil conditions.
 - c. Only when the crane is not standing on level terrain.
 - d. Only when full rated loads are anticipated.

9. In fording operations the driver should:
- a. Ignore bottom consistency.
 - b. Shift the transmission into the low-speed range, and speed up the engine to minimize the danger of stalling.
 - c. Maintain a minimum speed of 8 miles per hour.
 - d. Install the three drain-plugs before entering the water.
10. The 30-ton crane's Lubrication Instruction requires daily lubrication of:
- a. The planetary hub (drain and refill).
 - b. The differential (drain and refill).
 - c. The hydraulic reservoir (check level and fill as required).
 - d. All of the above.
11. Abnormal operating conditions which cause shortened intervals between lubrication servicing, include:
- a. Extreme temperatures (high or low).
 - b. Immersion in water.
 - c. Continued operation in sand or dust.
 - d. All of the above.
12. The hydraulic system of the 30-ton crane supplies the power needed to operate:
- a. The outrigger function.
 - b. The outrigger and the winch functions.
 - c. The outrigger, winch, and swing functions.
 - d. None of the above.
13. When operating the pile driver with the 30-ton crane, the:
- a. Piling is set with the auxiliary winch and the hammer is held with the main winch.
 - b. Piling is set with the main winch and the hammer is held with the auxiliary winch.
 - c. Outriggers need not be used.
 - d. Lines holding the pile driver and the pile must remain taut.
14. To travel with the pile driver, the operator:
- a. Must always have a signalman on the ground.
 - b. Maintains a minimum speed of 6-8 miles per hour.
 - c. Retracts the outriggers.
 - d. All of the above.

15. To operate with a clamshell, the 30-ton crane operator:
- a. Must recalibrate the load gage indicator.
 - b. Must remove the weighload dynamometer before installing the clamshell.
 - c. Must remove the forward outriggers.
 - d. None of the above.
16. The 30-ton crane's electrical system is a:
- a. 12-volt direct current system with a negative ground.
 - b. 12-volt direct current system with a positive ground.
 - c. 24-volt direct current system with a negative ground.
 - d. 24-volt direct current system with a positive ground.
17. Whenever you are lifting loads with the 30-ton crane, the axle oscillation switch in the lockout solenoid circuit should be:
- a. Placed in the down position to lock the axle.
 - b. Placed in the up position so as not to lock the axle.
 - c. Placed in the neutral position.
 - d. None of the above.
18. If, while swinging a load, the turntable continues swinging after you release the swing controls, you should:
- a. Cease operations and troubleshoot the cause of the malfunction.
 - b. Record this fact on your daily operator's report.
 - c. Know you activated the wrong end of the swing control pedal.
 - d. Do nothing. This is a characteristic of the free swing type crane.
19. If, when raising a load with the crane, the black pointer on the load indicator goes beyond the maximum value shown on the gage, you should:
- a. Reset the red pointer on the load indicator.
 - b. Reset the maximum value on the load indicator.
 - c. Rig additional parts of line.
 - d. Do none of the above.
20. The level indicator, a bubble type level in the cab, is used with the outriggers to level the:
- a. Boom.
 - b. Turntable.
 - c. Hoist control lever.
 - d. All of the above.

21. If, during a pile driving operation, you note the piling stops, you should:
- a. Continue operating the driver until the piling is at the desired depth.
 - b. Continue operating the driver, but only for a maximum of 10 strokes after penetration stops.
 - c. Retract the forward outriggers for increased driving thrust.
 - d. Do none of the above.
22. The 30-ton, rough terrain crane can accommodate a 2-line clamshell, not larger than:
- a. 3/4 cubic yards.
 - b. 1 3/4 cubic yards.
 - c. 3 1/2 cubic yards.
 - d. All of the above.
23. When preparing to winch, the block should be winched out:
- a. Until the block is resting on the ground.
 - b. Until there is no tension on the cable.
 - c. Actuating the freefall handle so the block drops to the ground.
 - d. Always keeping tension on the cable so the wire rope is kept tightly wrapped on the winch drums.
24. The 30-ton, rough terrain crane is capable of safely fording depths of:
- a. Up to 3 feet.
 - b. Up to 5 feet.
 - c. Up to 7 feet.
 - d. All of the above.
25. When traveling with a load, the operator must:
- a. Install the cargo bumper brackets in the extended position.
 - b. Position the fully retracted boom over the front of the carrier and rest the load against the cargo bumper.
 - c. Lock out axle oscillation by engaging the override switch and limit speeds to 3 miles per hour or less.
 - d. All of the above.

Correct Responses - Crane, Rough Terrain, Hydraulic, 30 Ton, Operator Test

- | | | | | | |
|----|---|-----|---|-----|---|
| 1. | c | 9. | b | 17. | a |
| 2. | d | 10. | c | 18. | d |
| 3. | a | 11. | d | 19. | c |
| 4. | b | 12. | c | 20. | b |
| 5. | d | 13. | a | 21. | b |
| 6. | c | 14. | a | 22. | a |
| 7. | a | 15. | b | 23. | d |
| 8. | a | 16. | c | 24. | b |
| | | | | 25. | d |

CRANE, WHEEL-MOUNTED, SELF-PROPELLED, 7 1/2-TON
TAM B0445 NSN 3810-01-063-5387 ID 07691B
OPERATOR KNOWLEDGE (AWARENESS/SAFETY) TEST

NAME:	_____	<u>SUMMARY</u>
ORGANIZATION:	_____	0-6 Wrong Satisfactory ()
DATE:	_____	7 or more Wrong Unsatisfactory ()

INSTRUCTIONS

The following items test your knowledge of the 7.5-ton, wheel-mounted crane's capabilities, characteristics, and related safety considerations. For those 20 questions whose question numbers are circled, read each answer and place a check in the parenthesis () next to the most correct answer. Disregard those questions whose question numbers have not been circled.

-
1. When attempting to start the crane's engine, you should:
 - () a. Never crank the engine for more than 30 seconds during an attempted start.
 - () b. Allow about 2 minutes for the starter motor to cool after a failed starting attempt, before attempting another start.
 - () c. After 4 failed starting attempts, correct the malfunction before further attempted starts.
 - () d. All of the above.

 2. If, after the engine starts, the oil pressure and/or temperature indicators do not display proper readings, you should:
 - () a. Note this on your daily operator's report so the gages can be replaced at the next scheduled maintenance period.
 - () b. Continue operations but restrict load lifts to two-thirds of rated capacity.
 - () c. Shut down the engine and correct the malfunction before resuming operation.
 - () d. Operate the engine at part throttle and no load for 15 minutes, periodically observing the gages.

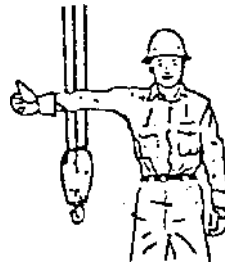
3. After operating the crane in lifting operations, and before beginning extended road travel with the crane, the operator should:
- a. Increase the tire pressure to the correct road pressure of 55 PSI (pounds per square inch).
 - b. Reduce the tire pressure to the correct road pressure of 40 PSI (pounds per square inch).
 - c. Rotate the boom 15 degrees left of center and lock in this position to offset the standard right slope road cant.
 - d. None of the above.
4. For road travel operation with the crane, the operator should:
- a. Travel with an empty hook positioned so it can swing freely.
 - b. Not be concerned with avoiding holes, rocks, extremely soft surfaces, and other obstacles, since the crane's frame is made of all welded high-strength steel.
 - c. Drive with the lift cylinder bottomed to insure maximum clearance of overpasses, overhead power lines, etc.
 - d. None of the above.
5. The 7 1/2 ton has several methods of steering available to the operator. They include:
- a. Front-wheel, rear-wheel, four-wheel, and crabbing.
 - b. Front-wheel, rear-wheel, and crabbing.
 - c. Front-wheel, four-wheel, and crabbing.
 - d. Front-wheel, four-wheel, and rear-wheel.
6. In operating the 7.5-ton crane, you use the four-wheel drive mode:
- a. Never. This crane has no such mode.
 - b. Habitually, for added traction and stability during high-speed road travel.
 - c. Only when two-wheel traction is insufficient.
 - d. Only in conjunction with four wheel steering.
7. As the crane's boom operating radius decreases, the rated lift capacity:
- a. Decreases.
 - b. Increases.
 - c. Remains constant.
 - d. None of the above.

8. Compressed air may be used for cleaning purposes:
- a. Never.
 - b. Only when it is reduced to less than 30 PSI (pounds per square inch).
 - c. Always.
 - d. Only when it is reduced to less than 30 PSI (pounds per square inch) and then only with effective chip guarding and personnel protective equipment.
9. After fording with the 7.5-ton crane you should:
- a. Immediately remove the four drain plugs.
 - b. Engage the fan disconnect lever so that cooling air will be circulated through the radiator cooling fins.
 - c. Release the flotation buoys.
 - d. None of the above.
10. Before performing maintenance on the 7.5-ton crane, you should:
- a. Remove all weight from the outriggers.
 - b. Lower attachments to the ground or place on suitable blocking.
 - c. Have an approved fire extinguisher available and know how to use it.
 - d. All of the above.
11. When lifting with outriggers, you should:
- a. Remove all weight from the crane's tires before lifting.
 - b. Use the load line in one spot check to conform the levelness of the crane.
 - c. Be aware side loadings as well as vertical loadings are allowed.
 - d. None of the above.
12. You may swing a load over personnel:
- a. Only if the load is suspended from the boom.
 - b. Only if the load is attached to the boom.
 - c. Never.
 - d. None of the above.
13. When shutting down the crane, which of the following do you not do:
- a. Engage the brakes.
 - b. Lower the boom and the load.
 - c. Insure the transmission is not left in neutral.
 - d. All of the above.

14. Which of the following items are checked daily, and lubricated as required?
- a. Hydraulic reservoir and engine oil dipstick.
 - b. Hydraulic reservoir and Cardan joint.
 - c. Engine oil dipstick and Hook Block Sheave.
 - d. All of the above.
15. In travel operation with the 7.5-ton crane, you should:
- a. Ensure the load limit of bridges you will cross is less than the crane's weight.
 - b. Never back up without the aid of a signalman to verify the area behind the crane is clear of obstructions.
 - c. Ensure the swing lock is not engaged.
 - d. All of the above.
16. Because of the electrocution hazard involved in operating the crane around a power line, the crane should never be operated:
- a. Within 3 feet of any electrical power line.
 - b. Within 20 feet of any electrical power line.
 - c. Within 50 feet of any electrical power line.
 - d. None of the above.

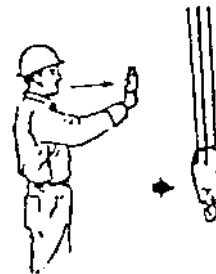
17. The arm and hand signal shown here, signals the operator to:

- a. Stop.
- b. Dog everything.
- c. Raise the boom.
- d. None of the above.



18. The arm and hand signal shown here, signals the operator to:

- a. Move slowly.
- b. Lower.
- c. Travel.
- d. Extend the boom.



19. The height of the crane is such that you could move it under an overhead obstruction as long as it had an overhead clearance of:
- a. 11 feet 6 inches.
 - b. 12 feet 3 inches.
 - c. 12 feet 9 inches.
 - d. All of the above.
20. The engine oil pressure and/or coolant temperature warning light will remain lit whenever:
- a. During operation, the coolant temperature increases to 205 degrees, or higher, Fahrenheit, and/or the engine oil pressure drops to 4 pounds per square inch, or less.
 - b. During operation, the coolant temperature decreases to 205 degrees, or lower, Fahrenheit and/or the engine oil pressure raises to 4 pounds per square inch, or more.
 - c. During operation, the engine oil pressure gage fails and/or the engine coolant temperature gage fails.
 - d. None of the above.
21. The crane's outrigger selector valve allows the operator:
- a. To operate one outrigger at a time.
 - b. To operate either one outrigger or two outriggers (2 front and 2 rear, only) at one time.
 - c. To operate the air control pressurization system that activates the outriggers.
 - d. To operate either one outrigger or two outriggers (2 front, right front and right rear, 2 rear, or left front and left rear, only) at one time.
22. If during night operations, you observed a blue light illuminated on the center of your control panel, you:
- a. Would know that the crane's headlights are on the high beam position.
 - b. Are operating in a two block condition.
 - c. Know the crane's lifting capacity has not been exceeded.
 - d. None of the above.

23. After an extended period of road travel, the operator must:
- a. Reduce the tire air pressure to 40 pounds per square inch before lifting on rubber.
 - b. Allow the tires to cool to ambient temperature before lifting on rubber.
 - c. Not lift off rubber.
 - d. None of the above.
24. The crane should never be driven with the boom off center because:
- a. It is impossible to control the boom and it will be in a free travel mode.
 - b. Automatic oscillation lockout will occur, making the crane subject to tipping on uneven surfaces.
 - c. This will cause severe damage to the transmission and front axle.
 - d. All of the above.
23. Load charts represent:
- a. A safe load with 50 percent safety factor included.
 - b. A safe load with 10 percent safety factor included.
 - c. The absolute maximum allowable loads.
 - d. None of the above.

Correct Responses - Crane, Wheel-Mounted, Self-Propelled, 7.5-Ton, Operator Test

- | | | |
|------|-------|-------|
| 1. d | 9. b | 17. c |
| 2. c | 10. d | 18. c |
| 3. b | 11. a | 19. d |
| 4. d | 12. c | 20. a |
| 5. a | 13. c | 21. d |
| 6. c | 14. a | 22. a |
| 7. b | 15. b | 23. b |
| 8. d | 16. b | 24. b |
| | | 25. c |

DECONTAMINATING APPARATUS,
POWER-DRIVEN, SKID-MOUNTED
500 GALLON

TAM B0465 NSN 4230-00-926-9488 ID 06604A
OPERATOR KNOWLEDGE (AWARENESS/SAFETY) TEST

NAME:	_____	<u>SUMMARY</u>
ORGANIZATION:	_____	0-6 Wrong Satisfactory ()
DATE:	_____	7 or more Wrong Unsatisfactory ()

INSTRUCTIONS

The following items test your knowledge of the power-driven, skid-mounted decontaminating apparatus' capabilities, characteristics, and related safety considerations. For those **20** questions whose question numbers are circled, read each answer and place a check in the parenthesis () next to the most correct answer. Disregard those questions whose question numbers have not been circled.

-
1. The M12A1 decontaminating apparatus can be used for:
 - () a. Spraying decontaminating materials.
 - () b. Firefighting with water or foam.
 - () c. Deicing and cleaning vehicles.
 - () d. Showering personnel.
 - () e. All of the above.
 2. The major components of the M 12A1 decontaminating apparatus include:
 - () a. Pump unit assembly, tank unit assembly, and personnel shower assembly.
 - () b. Pump unit assembly, tank unit assembly, and liquid fuel water heater.
 - () c. Personnel shower assembly, tank unit assembly, and personnel shower assembly.
 - () d. Pump unit assembly, tank unit assembly, and personnel shower assembly, and a liquid fuel water heater.
 3. When starting the decontaminating apparatus, the throttle should be:
 - () a. Pushed in as far as it will go toward the panel.
 - () b. Pulled out as far as it will go from the panel.
 - () c. Pulled out as far as it will go from the panel, then pushed in approximately one-half the distance it was pulled out.
 - () d. None of the above.

4. When starting the decontaminating apparatus, the low oil pressure switch should be:
- a. Held in the RUN position.
 - b. Pushed in and held until the oil pressure gage indicates 20 pounds per square inch or more.
 - c. Pushed in until the start-magneto switch is placed in the start position.
 - d. None of the above.
5. The engine's governor is factory set to control the engine speed at 3,850 revolutions per minute. If the engine will not operate at 3,850 revolutions per minute, the operator should:
- a. Raise the governor setting in increments of 50 revolutions per minute until the engine will operate.
 - b. Lower the governor setting in increments of 50 revolutions per minute until the engine will operate.
 - c. Notify organizational maintenance personnel.
 - d. Do none of the above.
6. As a precaution against lethal carbon monoxide poisoning, especially when operating in an enclosed area, the:
- a. Operators must wear protective masks.
 - b. Gasoline engine exhaust fumes must be vented away from the operator.
 - c. Voltage regulator switch must be kept in the OFF position.
 - d. None of the above.
7. To prevent damage to the M2 water heater, the operator, prior to igniting the boiler, will:
- a. Operate the pump unit for 2 minutes with the "Heater-On Purge-On" switch in the Purge-On position.
 - b. Insure the exhaust stack is securely capped.
 - c. Insure clear water or slurry is circulated through the boiler.
 - d. All of the above.

8. If the M2 water heater does not ignite within 10 seconds after ignition is attempted, the operator should:
- a. Place the "Heater-On Purge-On" switch in the Purge-On position.
 - b. Check all switch settings and connections before attempting ignition a second time.
 - c. Place the "Heater-On Purge-On" switch in the Heater-On position and allow the apparatus to stand 2 minutes before attempting ignition a second time.
 - d. Place the "Heater-On Purge-On" switch in the Purge-On position, make no attempt to restart the M2 water heater, and notify organizational maintenance personnel.
9. When loading the tank with STB decontaminating agent, the correct sequence is:
- a. Load the STB decontaminating agent, then the required amount of water, and finally the M2 antiset and antifoaming agent.
 - b. Load the (M2 antiset and antifoaming agent, then the required amount of water, and finally the STB decontaminating agent.
 - c. Load the required amount of water, then add the M2 antiset and antifoaming agent, and finally the STB decontaminating agent.
 - d. None of the above.
10. The most effective mixture of water and STB decontaminating agent is prepared by mixing:
- a. Forty parts (by weight) of STB decontaminating agent with 60 parts (by weight) of water.
 - b. Sixty parts (by weight) of STB decontaminating agent with 40 parts (by weight) of water.
 - c. Varying amount of STB decontaminating agent and water based on (1) water temperature, (2) water purity, and (3) time remaining before planned use.
 - d. All of the above.
11. The only types of liquids that should be cycled through the M2 water heater are:
- a. Cold water, with and without chemicals added.
 - b. Hot water, with and without chemicals added.
 - c. Light slurry.
 - d. None of the above.

12. When decontaminating with calcium hypochlorite (high-test bleach), the operator:
- a. Should insure tentage and other clothing is thoroughly sprayed, then allowed to dry in the open air.
 - b. Need not worry about splashing the solution on exposed areas of skin.
 - c. Must wear a full set of rubber protective clothing.
 - d. None of the above.
13. For deicing operations, the operator should use:
- a. Cold water with chemicals added.
 - b. Cold water without chemicals added.
 - c. Hot water with chemicals added.
 - d. Hot water without chemicals added.
 - e. None of the above.
14. When operating the decontaminating apparatus in salt-water or high-humidity areas, the operator would:
- a. Keep all exterior surfaces well painted.
 - b. Coat the battery terminals with a coat of GAA (Grease, Automotive and Artillery).
 - c. Clean corrosion from electrical terminals.
 - d. Do all of the above.
15. The M 12A1 decontaminating apparatus is lubricated using:
- a. A handgun.
 - b. An oilcan.
 - c. A grease handgun and an oilcan.
 - d. None of the above.
16. Proper connections from the tank unit through the pump unit to the discharge, when pumping water or slurry, will allow:
- a. Only one discharge hose to be operated.
 - b. Two discharge hoses to be operated at the same time.
 - c. Three discharge hoses to be operated at the same time.
 - d. All of the above.
17. There are three nozzles issued with the decontaminating apparatus. The only nonadjustable nozzle is the:
- a. Fire hose foam nozzle.
 - b. Fire hose water nozzle.
 - c. Slurry nozzle.
 - d. None of the above.

18. The operator is authorized to perform selected functions with the gun assembly. These functions include:
- a. Removal.
 - b. Inspection.
 - c. Cleaning.
 - d. Installing.
 - e. All of the above.
19. To avoid injury or electrical shock when the M2 water heater is not in use, the voltage regulator switch should:
- a. Be kept in the OFF position.
 - b. Be kept in the ON position.
 - c. Be kept in the NEUTRAL spring-loaded position.
 - d. None of the above.
20. Before entering the tank assembly for any reason, the operator should:
- a. Flush the interior of the tank with water to dissolve STB decontaminating agent.
 - b. Drain the tank.
 - c. Ventilate the interior of the tank with a stream of forced air to drive out the vapors.
 - d. Station someone outside to prevent the equipment from being moved, forklifted, hoisted, or used, and who can come to the operator's aid, if necessary.
 - e. All of the above.
21. Authorized fuels, for use in the M2 water heater, include:
- a. Methanol, alcohol, combat automotive gasoline, and diesel fuel (DF 1 and 2).
 - b. Combat automotive gasoline, jet fuel (JP-4), kerosene, and burner fuel oil, grade No. 2.
 - c. Diesel fuel (DF 1 and 2), kerosene, and combat automotive gasoline.
 - d. None of the above.
22. At any one time, the personnel shower assembly has the capacity of handling
- a. Up to 16 personnel at one time.
 - b. Up to 20 personnel at one time.
 - c. Up to 24 personnel at one time.
 - d. Up to 28 personnel at one time.

23. The skid-mounted stainless-steel tank of the tank unit assembly has a volume and working capacity of:
- a. 500-gallons volume, 375-gallons working capacity.
 - b. 500-gallons volume, and varying working capacities (about 447 gallons of water or 317 gallons of slurry).
 - c. Varying volume with 325-gallons working capacity.
 - d. None of the above.
24. When loading the tank unit assembly with water, the operator should:
- a. Always use the cleanest water available, as grit or dirt in the water under pressure damages the pump and nozzles.
 - b. Use the most readily available water; the filter system will separate grit and dirt from the water.
 - c. Only load water from purged hydrants or tank trucks.
 - d. None of the above.
25. The decontaminating apparatus' suction hose can load from a stream, pond, or other natural source, if:
- a. The distance from the source to the apparatus is 125 feet or less.
 - b. The height from the natural water source to the pump does not exceed 15 feet.
 - c. The natural water's grit and dirt content is Class III, or less.
 - d. All of the above.

Correct Responses -Decontaminating Apparatus, 500-Gallon, Operator Test

- | | | |
|------|-------|----------|
| 1. e | 9. c | 17. a |
| 2. d | 10. a | 18. e |
| 3. c | 11. d | 19. a |
| 4. b | 12. c | 20. e |
| 5. c | 13. d | 21. b, a |
| 6. b | 14. d | 22. c |
| 7. a | 15. c | 23. b |
| 8. d | 16. b | 24. a |
| | | 25. b |

FLOODLIGHT SET, ELECTRIC, TRAILER-MOUNTED
TAM B0630 NSN 6230-00-999-9290 ID 00903K
OPERATOR KNOWLEDGE (AWARENESS/SAFETY) TEST

NAME:	_____	<u>SUMMARY</u>
ORGANIZATION:	_____	0-6 Wrong Satisfactory ()
DATE:	_____	7 or more Wrong Unsatisfactory ()

INSTRUCTIONS

The following items test your knowledge of the floodlight set's capabilities, characteristics, and related safety considerations. For those 20 questions whose question numbers are circled, read each answer and place a check in the parenthesis () next to the most correct answer. Disregard those questions whose question numbers have not been circled.

-
1. The floodlight set's engine has been designed to burn:
 - () a. Kerosene, gasoline, and diesel fuel (DF-1 and DF-2 only).
 - () b. Gasoline and diesel fuel (DF-1 and DF-2 only).
 - () c. Diesel fuel (DF-1 and DF-2 only).
 - () d. None of the above.
 2. When filling the fuel tanks, the operator should:
 - () a. Never pour or fill from a metallic container or nozzle.
 - () b. Keep the filler spout in contact with the fuel tank to avoid static electricity.
 - () c. Keep a nonmetallic object between the filler spout and the fuel tank.
 - () d. Do none of the above.
 3. Inflation of the floodlight set's tires is 40 pounds per square inch for highway movement. For cross-country movement, the operator should:
 - () a. Increase this pressure to 55 pounds per square inch.
 - () b. Do nothing. Cross-country movement is not allowed.
 - () c. Maintain the same 40 pounds per square inch.
 - () d. Reduce the inflation to only 15 pounds per square inch.
 4. Before shipping the floodlight set via railroad, overseas, or on long distance moves, the operator must insure the unit's shock mounts are:
 - () a. Inactivated.
 - () b. Activated.
 - () c. Removed.
 - () d. None of the above.

5. The floodlight set's engine is:
- a. A four-cycle, two cylinder, air-cooled diesel.
 - b. A two-cycle, two cylinder, oil-cooled diesel.
 - c. A four-cycle, four cylinder, air-cooled diesel.
 - d. None of the above.
6. The floodlight set's engine produces carbon monoxide gas. The operator should know that carbon monoxide gas:
- a. Is odorless.
 - b. Is colorless.
 - c. Can cause serious injury or even death if inhaled.
 - d. Is properly described in all of the above answers.
7. Which of the following actions are permitted by current operating safety precautions?
- a. Servicing or repairing the unit while it is in operation, if six or fewer floodlights are connected.
 - b. Bypassing no more than three circuit breakers.
 - c. Removing the engine shrouds to further cool the engine.
 - d. None of the above.
8. The floodlight set has been designed to operate when installed at an angle not to exceed _____ degrees from the horizontal.
- a. 5
 - b. 10
 - c. 15
 - d. 25
9. The floodlight unit's engine is cooled by:
- a. Hydraulic fluid.
 - b. Standard radiator fluid.
 - c. Forced air.
 - d. None of the above.
10. If the generator is operated on terrain with excessive angles from the horizontal, you can anticipate problems with:
- a. The flow of fuel (gravity feed).
 - b. Surging voltages from the set's generator.
 - c. Bearing failures.
 - d. All of the above.

11. Before operation inspections and services by the operator need only be performed:
- a. If the unit has not been used for more than 14 days.
 - b. It will be operating in temperatures below 32 degrees Fahrenheit.
 - c. Before every period of operation.
 - d. None of the above.
12. The floodlight unit's hour meter indicates:
- a. Hours remaining until next required quarterly service.
 - b. Continuous hours of operation.
 - c. Hours remaining before mandatory cleaning of the air filters.
 - d. Total elapsed operating hours of the unit.
13. During stopping operations you allow the engine to cool at the governed speed for 5 minutes, after:
- a. Turning the Master Switch OFF.
 - b. Turning all circuit breakers OFF.
 - c. Injecting a metered dosage of ether.
 - d. Doing all of the above.
14. For floodlight set operation in extremely cold weather, the operator would not:
- a. Keep the fuel tank filled to one-half full, or less, to minimize moisture condensation.
 - b. Maintain the batteries fully charged.
 - c. Use low temperature fuel.
 - d. Do any of the above.
15. The two primary methods of emplacing the floodlights are:
- a. On the corner poles and reel poles.
 - b. On the corner poles and tripods.
 - c. On the tripods and elevating poles.
 - d. None of the above.
16. The floodlights, using provided equipment, can be elevated to heights of _____ feet off the ground.
- a. 13.
 - b. 18.
 - c. 20.
 - d. 22.

17. The floodlight set's technical manual instructs the operator to "compensate for increased tire pressure" for operation in extreme heat. This means:
- a. To increase the set's tire pressure above normal.
 - b. To frequently check the set's tire pressure to determine if it is rising above normal.
 - c. To allow excessive pressure to escape from the unit's tires.
 - d. None of the above.
18. If directed to lay out all of the floodlight set's special organizational maintenance tools, you would:
- a. Ask for a clarification, since no such tools exist.
 - b. Lay out the cylinder sleeve puller and the injector tester.
 - c. Lay out the injector tester and the precombustion chamber puller.
 - d. Lay out the cylinder sleeve puller and the precombustion chamber puller.
19. In cleaning rubber floodlight set parts, you would use:
- a. Cleaning solvent and crocus cloth.
 - b. A warm water detergent.
 - c. A lint free cloth and a bristle brush.
 - d. None of the above.
20. In cleaning glass floodlight set parts, you would use:
- a. A water-baking soda solution.
 - b. The appropriate cleaning solvent.
 - c. A water-ammonia solution.
 - d. None of the above.
21. The floodlight set's authorized speed for towing on improved roads is:
- a. 35 miles per hour.
 - b. 40 miles per hour.
 - c. 50 miles per hour.
 - d. 55 miles per hour.
22. The floodlight set includes:
- a. 8 floodlights, 6 tripods, and 4 corner poles.
 - b. 6 floodlights, 4 tripods, and 4 corner poles.
 - c. 8 floodlights, 2 tripods, and 6 corner poles.
 - d. 8 floodlights, 4 tripods, and 4 corner poles.

23. The one lubricating oil level that must be checked daily is the:
- a. Starting motor.
 - b. Generator end bearing.
 - c. Wheel bearings.
 - d. Crankcase level gage.
24. Before transporting the unit or making repairs, the operator should:
- a. Apply the prime mover's air brakes.
 - b. Disconnect and tape the negative battery cable.
 - c. Disconnect and tape the positive battery cable.
 - d. Do all of the above.
25. There are eight weatherproof, electrical receptacles provided with the floodlight set. They are located:
- a. Four on the housing and two on each of the two-cable reels.
 - b. Two on the housing and two on each of the three-cable reels.
 - c. Six on the housing and one on each of the two-cable reels.
 - d. On none of the above locations.

Correct Responses - Floodlight Set, Electric, Trailer-Mounted, Operator Test

- | | | | | | |
|----|---|-----|---|-----|---|
| 1. | c | 9. | c | 17. | c |
| 2. | b | 10. | c | 18. | a |
| 3. | d | 11. | c | 19. | b |
| 4. | a | 12. | d | 20. | c |
| 5. | a | 13. | b | 21. | c |
| 6. | d | 14. | a | 22. | d |
| 7. | d | 15. | b | 23. | d |
| 8. | b | 16. | a | 24. | b |
| | | | | 25. | a |
-

GENERATOR SET, 30KW, 60HZ/400HZ

TAM B0953 NSN 6115-00-111-3912 ID 06859A

TAM B0971 NSN 6115-00-111-3911 ID 06858A

OPERATOR KNOWLEDGE (AWARENESS/SAFETY) TEST

NAME:	_____	<u>SUMMARY</u>
ORGANIZATION:	_____	0-6 Wrong Satisfactory ()
DATE:	_____	7 or more Wrong Unsatisfactory ()

INSTRUCTIONS

The following items test your knowledge of the PU-708/G and PU-709/G, Diesel Engine driven Generator Set's capabilities, characteristics, and related safety considerations. For those **20** questions whose question numbers are circled, read each answer and place a check in the parenthesis () next to the most correct answer. Disregard those questions whose question numbers have not been circled.

-
1. When selecting a site for the generator set, you must locate it:
 - () a. No further than 25 feet from any paralleled generator set.
 - () b. No further than 24 feet from the auxiliary fuel source.
 - () c. No further than 75 feet of the remote area.
 - () d. AH of the above.
 2. When operating the generator set indoors or in an enclosed area, the operator must:
 - () a. Wear his protective mask.
 - () b. Insure that the noise level does not exceed 80 decibels.
 - () c. Insure that the exhaust fumes are piped outside the building or enclosure.
 - () d. All of the above.
 3. To guard against electrocution caused by electrical defects in the unit's load lines or load equipment, the operator:
 - () a. Will avoid locating the generator in damp areas and will turn the generator off in rainstorms.
 - () b. Will not operate the generator unless it has a proper ground connection.
 - () c. Will never handle electrolyte around the generator set while it is running.
 - () d. Will never attach parallel generators to a load.

4. The rule for diluting electrolyte (which contains sulfuric acid) is to:
- a. Dilute electrolyte with water, never water with electrolyte.
 - b. Dilute water with electrolyte, never electrolyte with water.
 - c. Not be concerned with how electrolyte and water are mixed; rather handle it with care, washing the body, eyes, or clothing with clean water should the mixture be splashed on them.
 - d. None of the above.
5. When filling the generator's fuel tank directly, you should:
- a. Maintain a constant metal-to-metal contact between the fuel tank filler neck and the spout of the container to prevent sparking caused by static electricity.
 - b. Place a nonmetallic contact between the fuel tank filler neck and the spout of the container to prevent sparking caused by static electricity.
 - c. Insure the generator is properly grounded. Further spark avoidance precautions are not necessary.
 - d. None of the above.
6. The primary (preferred) method of filling the generator's fuel tank is:
- a. Direct filling from a hand-held container.
 - b. From an auxiliary fuel supply.
 - c. Application of sealed, fixed volume supply containers hand held during the gravity feed process.
 - d. None of the above.
7. Before attempting to connect load cables, the operator should:
- a. Insure all switches are in the off or open position.
 - b. Insure the generator set is not operating.
 - c. Insure there is no input to the load.
 - d. All of the above.
8. When starting the generator's engine, you should:
- a. Use the controls on only the local panel at temperatures (ambient) of 50 degrees or more Fahrenheit.
 - b. Use the controls on only the remote panel at temperatures (ambient) of less than 50 degrees Fahrenheit.
 - c. Use the control on the local or remote panels.
 - d. None of the above.

9. When starting the generator's engine, you should:
- a. Not crank the engine in excess of 30 seconds at a time.
 - b. Allow the starter to cool a minimum of 3 minutes between crankings.
 - c. Hold the START-STOP switch to START until the engine starts to accelerate under governor control.
 - d. All of the above.
10. For cold weather starting, the generator set is provided ether starting aid. The correct procedure for injecting ether into the engine manifold is:
- a. Inject three doses of ether, 2 to 3 seconds per dose, prior to cranking the engine.
 - b. Pull out the ether starting aid actuator for 2 or 3 seconds, while cranking, and then push the actuator in.
 - c. Inject three doses of ether, 2 to 3 seconds per dose, allowing 15 seconds between each dose for aeration, then crank the engine.
 - d. None of the above.
11. If, after injecting three shots of ether during an attempted cold weather start, the engine will not start or it falters, the operator should:
- a. Stop the attempted operation and notify proper maintenance personnel.
 - b. After a 5 minute wait, repeat the process with 3 more shots of ether.
 - c. Revert to local panel operation.
 - d. None of the above.
12. The difference between cold weather starting in temperatures of 32 degrees Fahrenheit to minus 25 degrees Fahrenheit and minus 25 degrees Fahrenheit to minus 65 degrees Fahrenheit is:
- a. At the colder temperatures, the operator preheats the ether to about 100 degrees Fahrenheit before injecting it into the manifold.
 - b. The doses of ether are doubled, that is the ether starting aid actuator is held out for 4 to 6 seconds for each dose of ether.
 - c. An external heater is used to apply heat to the generator, through the space heater duct opening, until the lubricating oil, coolant, and battery temperature reach a minimum of minus 25 degrees Fahrenheit.
 - d. All of the above.

13. The generator can be paralleled with other generator sets having the same frequency rating. How many generator sets can be operated in parallel?
- a. There is no limit.
 - b. Three.
 - c. Five.
 - d. Seven.
14. During parallel generator operation, constant illumination of a reverse power indicator light indicates:
- a. The generators are functioning properly.
 - b. The generators are not sharing the load properly.
 - c. The load contactor switch is shorted out.
 - d. None of the above.
15. During fording operations, the generator set may:
- a. Be submerged to a level of about 33 inches from the bottom of the base, for a period not to exceed 3 minutes.
 - b. Not come into contact with water.
 - c. Experience damage if the fuel tank vent valve is closed.
 - d. None of the above.
16. The generator set's PROTECTION BY-PASSED switch:
- a. Will cause the PROTECTION BY-PASSED indicator light to blink on and off if placed in the ON position while the generator is operating.
 - b. Should only be placed in the ON position under conditions of extreme emergency.
 - c. Locks out all malfunctioning protective devices except overspeed and short circuit.
 - d. All of the above.
17. Which of the following would the operator not be expected to do when operating the generator in extreme heat?
- a. Check coolant level of radiator daily and add fresh water as necessary.
 - b. Service the air cleaner more frequently than usual.
 - c. Check radiator to see that there are no obstructions in the cooling fins.
 - d. Keep the fuel tank full to prevent condensation, but allow sufficient space for expansion of the fuel.

18. Under which operating conditions should you clean the air cleaner daily?
- a. Extreme heat.
 - b. None.
 - c. Dusty and/or sandy areas.
 - d. All of the above.
19. When preparing to wipe down the generator set with fresh water, the operator must:
- a. Reinstall the four plugs in the generator's base.
 - b. Close the fuel tank vent valve by pushing it down into the closed position.
 - c. Insure the generator set is not connected to a parallel bus.
 - d. Do all of the above.
20. The operator's inspection requirements on the generator set include:
- a. Before and during operation checks, but no after operation checks.
 - b. Before and after operation checks, but no during operation checks for safety reasons.
 - c. During and after operation checks, but no before operation checks because of their parallel interlocking.
 - d. None of the above.
21. If, when paralleling generators with cable, you notice the synchronizing lights glow alternately light and dark, you know:
- a. The voltage on at least one of the sets must be adjusted, using the voltage adjustment rheostat.
 - b. The phasing is wrong.
 - c. The system is operating properly.
 - d. None of the above.
22. The emergency shutdown switches are located:
- a. On the remote and auxiliary panel assemblies.
 - b. On the remote and local panel assemblies.
 - c. On the auxiliary and local panel assemblies.
 - d. On none of the above assemblies.
23. The generator set incorporates radio interference suppression componentry to:
- a. Reduce the noise level when operating at full load.
 - b. Prevent other equipment from interfering with the generator set.
 - c. Prevent interference with the load.
 - d. None of the above.

24. While operating five generators in parallel, you trip out one generator to perform maintenance on it. When you tripped it out, power from all the remaining generators ceased. You know:
- a. The total load exceeded the total load rating of the generator sets remaining on the line.
 - b. That you tripped the master generator.
 - c. The original paralleling was improperly connected.
 - d. None of the above.
25. The generator set is designed to operate on:
- a. Ethylene glycol, kerosenes, and combat automotive gasoline.
 - b. Kerosene, combat automotive gasoline, and diesel fuel.
 - c. Diesel fuel.
 - d. All of the above.

Correct Responses - Generator Set, 30kW, 60Hz/400Hz, Operator Test

- | | | |
|------|-------|-------|
| 1. d | 9. d | 17. b |
| 2. c | 10. b | 18. c |
| 3. b | 11. a | 19. c |
| 4. a | 12. c | 20. d |
| 5. a | 13. d | 21. b |
| 6. b | 14. b | 22. a |
| 7. d | 15. a | 23. c |
| 8. c | 16. d | 24. a |
| | | 25. c |
-

GENERATOR SET, 100 KW, 60HZ

TAM B1045

NSN 6115-00-133-9101

ID 07464A

OPERATOR KNOWLEDGE (AWARENESS/SAFETY) TEST

NAME:	_____	<u>SUMMARY</u>
ORGANIZATION:	_____	0-6 Wrong Satisfactory ()
DATE:	_____	7 or more Wrong Unsatisfactory ()

INSTRUCTIONS

The following items test your knowledge of the diesel engine driven 100 kilowatt generator set's capabilities, characteristics, and related safety considerations. For those 20 questions whose question numbers are circled, read each answer and place a check in the parenthesis () next to the most correct answer. Disregard those questions whose question numbers have not been circled.

-
1. The 100 kilowatt generator set must be placed:
 - a. Within 25 feet of any paralleled generator set.
 - b. Within 25 feet of any auxiliary fuel supply.
 - c. Within 500 feet of any remote control area.
 - d. All of the above.
 2. When installing the generator indoors, the operator would not:
 - a. Install a gas-tight exhaust line to the outside.
 - b. Close all surrounding doors and windows as a noise suppression precaution.
 - c. Provide metal shields for the exhaust line wherever it passes through flammable walls.
 - d. Do any of the above.
 3. To operate satisfactorily, the generator set must be installed within _____ degrees of level.
 - a. 5
 - b. 10
 - c. 15
 - d. 20

4. The generator set must not be operated until the ground terminal stud has been connected to a suitable ground. Grounding can be accomplished by using:
- a. An underground metallic water piping system.
 - b. A driven metal rod.
 - c. A buried metal plate.
 - d. All of the above.
5. When connecting an auxiliary fuel supply to the generator set, you are limited to:
- a. Within 25 feet of the generator set and not more than 12 feet below the transfer pumps.
 - b. Within 12 feet of the generator set and not more than 25 feet above the transfer pumps.
 - c. Within 25 feet of the generator set and not more than 12 feet above the transfer pumps.
 - d. None of the above.
6. Before connecting the load cables to the generator set, you should:
- a. Make sure the generator set is not operating.
 - b. Make sure there is no input to the load.
 - c. Make sure the generator set is not operating and that there is no input to the load.
 - d. None of the above.
7. Continuous cranking of the engine, when starting the set, should not exceed:
- a. 15 seconds.
 - b. 30 seconds.
 - c. 45 seconds.
 - d. 1 minute.
8. The starter should be allowed to cool, between crankings, a minimum of:
- a. 2 minutes.
 - b. 3 minutes.
 - c. 5 minutes.
 - d. 10 minutes.
9. The generator's ether aid is:
- a. Provided to assist in starting the generator at altitudes greater than 10,000 feet above sea level.
 - b. Provided to eliminate (diffuse) the toxic carbon monoxide in the generator's exhaust.
 - c. Provided as a cold weather starting aid.
 - d. Provided to do none of the above.

10. To operate the set in extreme cold (below 25 degrees below zero, Fahrenheit) you must:
- a. Use a winterization kit.
 - b. Preheat the ether starting aid.
 - c. Add water to the batteries after each day's final shutdown.
 - d. None of the above.
11. In freezing temperatures, after adding water to the batteries, the operator should:
- a. Remove ice, snow, and moisture from the area of the filler cap.
 - b. Charge the batteries or run the engine for at least 1 hour to thoroughly mix the water with the electrolyte.
 - c. Recharge the ether aid.
 - d. Do none of the above.
12. If after starting paralleled generators, you suddenly notice the synchronizing lights are glowing bright and then darkening in unison, you should:
- a. Shut down the generator sets and correct the phasing.
 - b. Shut down the generator sets and restart them, holding the AC Load Contactor Switch in the closed position until the AC Load Contactor Indicator illuminates.
 - c. Report the fact on your daily operator's report.
 - d. Do nothing. This is an indication of proper operation.
13. When servicing the set's batteries, water should be added to a level:
- a. At the bottom of the filler neck cap.
 - b. At the slots in the filler wells.
 - c. 3/8 of an inch above the plates.
 - d. At none of the above.
14. The fire extinguisher, provided with the set, can be used on all types of fires except:
- a. Electrical.
 - b. Gaseous.
 - c. Liquid oxygen.
 - d. None of the above.

15. If an electric winterization kit is used to preheat the engine coolant and lubricating oil, it should be allowed to operate a minimum of _____ hours, before starting the generator.
- a. 1/4.
 - b. 1/2.
 - c. 3/4.
 - d. 5.
16. For operating the set between 5,000 and 8,000 feet above sea level, the operator should:
- a. Keep all access doors and panels closed.
 - b. Maintain the fuel tank at half-full, or less, to avoid vapor lock.
 - c. Remove the ether aid unit.
 - d. Do none of the above.
17. The battle short switch:
- a. Bypasses all generator set faults, except engine overspeed and short circuit, for emergency operation.
 - b. Bypasses all generator set faults, except engine overspeed, for emergency operation.
 - c. Bypasses all generator set faults, except short circuit, for emergency operation.
 - d. Does none of the above.
18. Before performing maintenance on generator sets that are connected in parallel, you should:
- a. Ensure that all generator sets are de-energized.
 - b. Ensure that there is no power to the load.
 - c. Ensure that all generator sets are de-energized and that there is no power to the load.
 - d. Ensure none of the above.
19. The crankcase oil level is checked with the engine running. If the “engine running” side of the dipstick is turned towards the operator, the reading will be:
- a. High.
 - b. Low .
 - c . Accurate.
 - d. None of the above.

20. Ether may be injected into a hot generator engine:
- a. Only at ambient temperatures below 32 degrees Fahrenheit.
 - b. Only under extreme conditions of cold (minus 35 degrees Fahrenheit, or colder).
 - c. Only if operating outdoors.
 - d. Never.
21. An experienced generator operator could be expected to start and stop the generator in:
- a. About 2 minutes each, or a total of about 4 minutes.
 - b. About 30 seconds each, or a total of about 1 minute.
 - c. About 5 minutes each, or a total of about 10 minutes.
 - d. None of the above.
22. The operator's after operation maintenance check is performed:
- a. Only after each full day (8 hours) of operation.
 - b. After every operating period.
 - c. Only as required under the actual operating conditions.
 - d. None of the above.
23. For remote operation, the control cubicle may be removed and positioned as far away from the generator set as:
- a. 50 feet.
 - b. 100 feet.
 - c. 500 feet.
 - d. 1 mile.
24. When removing batteries, you should remove the battery cables in the following sequence:
- a. Negative, negative, positive, positive.
 - b. Negative, positive, negative, positive.
 - c. Positive, positive, negative, negative.
 - d. None of the above. It doesn't matter.
25. Performing of maintenance during set operation is permitted:
- a. Only when the set is not operating in parallel.
 - b. Never.
 - c. Only when there is no attached load.
 - d. Only if the set has a double ground.

Correct Responses - Generator Set, 100kW, 60Hz, Operator Test

- | | | | | | |
|----|---|-----|---|-----|---|
| 1. | d | 9. | c | 17. | a |
| 2. | b | 10. | a | 18. | c |
| 3. | c | 11. | b | 19. | c |
| 4. | d | 12. | d | 20. | d |
| 5. | a | 13. | b | 21. | c |
| 6. | c | 14. | c | 22. | b |
| 7. | a | 15. | d | 23. | c |
| 8. | b | 16. | d | 24. | a |
| | | | | 25. | b |

GRADER, ROAD, MOTORIZED

TAM B1081

NSN 3805-01-059-0969

ID 00922F

OPERATOR KNOWLEDGE (AWARENESS/SAFETY) TEST

NAME:	_____	<u>SUMMARY</u>
ORGANIZATION:	_____	0-6 Wrong Satisfactory ()
DATE:	_____	7 or more Wrong Unsatisfactory ()

INSTRUCTIONS

The following items test your knowledge of the motorized road grader's capabilities, characteristics, and related safety considerations. For those **20** questions whose question numbers are circled, read each answer and place a check in the parenthesis () next to the most correct answer. Disregard those questions whose question numbers have not been circled.

-
1. Before inspecting the motorized road grader, the operator should:
 - () a. Lower all equipment and apply the parking brake.
 - () b. Stop the engine and turn the disconnect switch to Off.
 - () c. Block the wheels.
 - () d. Do all of the above.
 2. Prior to operating the motorized road grader, the operator inspects the wheel lean pin to insure:
 - () a. It has been removed.
 - () b. It is secured in place.
 - () c. It is not corroded.
 - () d. None of the above.
 3. The grader's service meter indicates:
 - () a. The operating hours remaining until the next scheduled maintenance.
 - () b. The total hours the engine has operated.
 - () c. The continuous, non-stop hours the grader has currently operated.
 - () d. When the moldboard was last serviced.
 4. If, while operating the grader, the engine coolant high temperature indicator light comes on, the operator should:
 - () a. Shift to a lower range and operate at a lower speed.
 - () b. Report this fact to unit maintenance personnel.
 - () c. Stop the engine and determine the cause before returning to service.
 - () d. Do none of the above.

5. The heating and cooling system can perform four functions in the operator's compartment. These functions are:
- a. Heating, defogging, pressurizing, and cooling.
 - b. Heating, accumulating, cooling, and modulating.
 - c. Defogging, accumulating, heating, and cooling.
 - d. None of the above.
6. The grader's backup alarm should sound:
- a. Whenever hydraulic pressure backs into the accumulator in excess of 45 pounds per square inch.
 - b. Anytime the Transmission Selector Lever is in Reverse position, or on the reverse side of the Neutral slot.
 - c. Whenever the surface material backs up higher than the top edge of the moldboard.
 - d. Under none of the above conditions.
7. The graders' governor control:
- a. Is preset at the factory. The operator has no authority to adjust it.
 - b. Is automatically adjusted, based on the load the engine is experiencing.
 - c. Is moved forward to decrease the engine's speed.
 - d. Is moved to the rear to decrease the engine's speed.
8. When the differential lock is engaged (locked) the:
- a. The speed of the wheels will be equal.
 - b. The grader will have power applied to all six wheels simultaneously.
 - c. The governor will be bypassed.
 - d. None of the above.
9. You would depress the Decelerator only when you:
- a. Have engaged the Hydraulic Unloading Valve.
 - b. Are fording the grader.
 - c. Want to temporarily decrease the engine speed below the governor control setting.
 - d. Were unable to shut off the grader's engine with the normal shutoff procedures.
10. The Hydraulic Unloading Valve is activated during:
- a. High-speed highway (improved roads) movement.
 - b. Movement down steep grades.
 - c. Those periods the differential lock is engaged.
 - d. Cold weather starting.

11. Blade sideshift is provided to allow you to:
- a. Continue operating the grader in the same tracks while moving the material left or right.
 - b. Keep close to the inside bank when working on a sidehill road or cut.
 - c. Place even wear across the entire cutting surface.
 - d. Do none of the above.
12. When inflating the grader's tires, the operator:
- a. Stands behind the tread of the tire.
 - b. Inflates to 65 pounds per square inch of air pressure.
 - c. Uses a self-attaching air chuck.
 - d. Uses a self-attaching air chuck and stands behind the tread of the tire.
13. The engine oil level is correct when it lies:
- a. Below the Full Mark and above the Add mark on the Engine Stopped side of the dipstick.
 - b. In the Safe Operating Range on the Engine Stopped side of the dipstick.
 - c. Above the red mark on the dipstick.
 - d. In none of the above locations.
14. If, after starting the grader, you release the hydraulic unloading valve rod slowly and the low oil pressure indicator does not go off within 6 seconds, you:
- a. Would stop the engine, investigate, and correct the cause.
 - b. Would note this fact on your daily operator's report.
 - c. Notify organizational maintenance when you shut down the grader at the end of the shift/day.
 - d. Would do none of the above.
15. If it becomes necessary to start the grader with an external electrical source, the jumper cables should be connected:
- a. Only after the grader's (to be started) main disconnect switch and power switch have been turned to the Off position.
 - b. Positive to positive and negative to negative.
 - c. With the final connection made to the starter ground terminal of the machine to be started.
 - d. As indicated in each of the above answers.

16. After starting the grader, the engine speed is kept low until the air pressure is in the Normal range. This should occur in about:
- a. 6 seconds or less.
 - b. 16 seconds or less.
 - c. 30 seconds or less.
 - d. 1 minute or less.
17. Once the engine is operating properly, all visual engine indicators:
- a. Should continue with steady illumination.
 - b. Will continue blinking at a steady rate.
 - c. Will go off.
 - d. Will do none of the above.
18. The operator's seat belt should be fastened:
- a. For nighttime operations.
 - b. For rough terrain operations.
 - c. If the operator is relatively inexperienced.
 - d. Every time the grader is moved.
19. When going downhill with the grader, the operator should:
- a. Push down on the transmission modulator pedal.
 - b. Allow the grader to coast by placing the transmission in the neutral position.
 - c. Keep the transmission engaged.
 - d. Do none of the above.
20. To grade on a S curve as shown in the picture to the right, the operator would:
- a. Articulate right, turn left, and side-shift right.
 - b. Articulate left, turn left, and side-shift left.
 - c. Articulate left, turn left, and side-shift right.
 - d. Do none of the above.

21. When operating on severe slopes, the operator would keep the back of the grader on the downhill side of the cut by:
- a. Wheel lean.
 - b. Crab steering.
 - c. Blade shift.
 - d. None of the above.
22. In normal leveling work, the operator should deliver the material to the outside of the rear wheels to:
- a. Reduce the width of the cut.
 - b. Maintain a smooth surface for the rear wheels.
 - c. Insure the blade is tipped to the correct working angle.
 - d. Do all of the above.
23. When operating on a steep slope, the grader should be:
- a. Operated in first gear, at a reduced engine speed.
 - b. Operated in first gear, at an increased engine speed.
 - c. Operated in first gear, with the governor controlling the engine speed.
 - d. None of the above.
24. Preferred engine fuels for the grader include:
- a. Kerosene, gasoline, and diesel.
 - b. Gasoline and diesel.
 - c. Diesel only.
 - d. None of the above.
25. You should never smoke while observing battery electrolyte levels because:
- a. It is not recommended by the grader's manufacturer.
 - b. Batteries give off carbon monoxide fumes.
 - c. Electrolyte is an acid.
 - d. Batteries give off flammable fumes that can explode. The no smoking rule is enforced to safeguard the operator.

Correct Responses - Grader, Road, Motorized, Operator Test

1.	d	9.	c	17.	c
2.	a	10.	d	18.	d
3.	b	11.	b	19.	c
4.	c	12.	d	20.	c
5.	a	13.	b	21.	b
6.	b	14.	a	22.	b
7.	c	15.	d	23.	a
8.	a	16.	a	24.	c
				25.	d

SAW, CHAIN, ONE-MAN PORTABLE
TAM B1830 NSN 3695-00-926-1754 ID 01011E
OPERATOR KNOWLEDGE (AWARENESS/SAFETY) TEST

NAME:	_____	<u>SUMMARY</u>
ORGANIZATION:	_____	0-3 Wrong Satisfactory ()
DATE:	_____	4 or more Wrong Unsatisfactory ()

INSTRUCTIONS

The following items test your knowledge of the chain saw's capabilities, characteristics, and related safety considerations. For those **10** questions whose question numbers are circled, read each answer and place a check in the parenthesis () next to the most correct answer. Disregard those questions whose question numbers have not been circled.

-
1. Which of the following are chain saw safety precautions:
 - a. Do not run your saw in a closed building.
 - b. Do not start your saw's engine without assistance.
 - c. Keep both hands on the saw while cutting.
 - d. Do not carry your saw between work sites with the engine running.

() a. Answers a, b, and c.
() b. Answers a, b, and d.
() c. Answers a, c, and d.
() d. Answers a, b, c, and d.
 2. The chain saw is:
 - () a. Single cycle, two cylinder, water-cooled.
 - () b. Two cycle, two cylinder, air-cooled.
 - () c. Two cycle, one cylinder, water-cooled.
 - () d. Two cycle, one cylinder, air-cooled.
 3. Oil is provided to the chain saw's bar and chain:
 - () a. Whenever the oiler button is depressed.
 - () b. Whenever the engine is running.
 - () c. Whenever the engine is running and also when the oiler button is depressed.
 - () d. By none of the above.

4. S.A.E. 30-weight oil is used in the chain saw during the warmer months. During colder weather, the oil should be changed to:
- a. S.A.E. 10-weight oil.
 - b. S.A.E. 20-weight oil.
 - c. S.A.E. 40-weight oil.
 - d. None of the above oils.
5. When operating a new chain saw, or a chain saw with a new chain, the operator should:
- a. Run the saw slowly, without the chain oiled, for 2 to 5 minutes.
 - b. Run the saw slowly, with only light oil on the chain, for the first minute or two.
 - c. Run the saw slowly for a minute or two, keeping the chain well oiled.
 - d. Do none of the above.
6. Required lubrication of the engine's internal moving parts is provided by:
- a. Periodically scheduled maintenance.
 - b. The operator's before and after operation maintenance services.
 - c. Both a. and b., above.
 - d. The oil, premixed with the gasoline.
7. If you are preparing the chain saw for storage (it will be idle for several months), you should:
- a. Drain the fuel from the fuel tank.
 - b. Drain the oil from the oil reservoir.
 - c. Start the engine and allow it to run at idle speed until all fuel is used.
 - d. Do all of the above.
8. After notching a tree in the direction of the desired fall, you make the final felling cut on the opposite side of the tree:
- a. About 2 inches above the notch.
 - b. At the same height as the notch.
 - c. About 2 inches below the notch.
 - d. Well below the notch.
9. If your saw becomes pinched in a log, you should:
- a. Pry the saw out.
 - b. Free the saw through the use of a wedge.
 - c. Attempt to force it on through the log.
 - d. Apply a liberal amount of oil before prying it out.

10. The fuel mixture for the chain saw should be prepared by:
- a. Pouring the gasoline into the saw's gas tank and then adding the oil.
 - b. Premixing the gasoline and oil in a separate container before pouring it into the saw's gas tank.
 - c. Pouring the oil into the saw's tank and then adding the gasoline.
 - d. Doing none of the above.
11. The chain saw's air filter is cleaned by:
- a. Compressed air limited to 25 pounds per square inch of pressure, or less.
 - b. Sloshing it around in clean gasoline or a cleaning solvent.
 - c. Brushing with a medium bristle brush.
 - d. None of the above.
12. The primary purpose of the saw's cylinder fins is:
- a. Cooling.
 - b. Noise deadening.
 - c. Strengthening (reinforcing).
 - d. None of the above.
13. Setting of the timing should be done by the operator:
- a. At regularly scheduled maintenance services.
 - b. Whenever the saw is transported into a severe climate.
 - c. Whenever the engine is not running smoothly.
 - d. Never.
14. If the saw's carburetor is set too lean, you would expect to find the saw:
- a. With insufficient lubrication.
 - b. With an engine that overheats.
 - c. Both of the above.
 - d. None of the above.
15. To properly warm up the chain saw so it will run smoothly, the operator:
- a. Runs the saw at the idle for a few minutes.
 - b. Runs the saw at about one-third throttle for a few minutes.
 - c. Runs the saw at about two-thirds throttle for a few minutes.
 - d. Does none of the above.

Correct Responses - Saw, Chain, One-Man Portable, Operator Test

- | | | | | | |
|----|---|-----|---|-----|---|
| 1. | c | 6. | d | 11. | b |
| 2. | d | 7. | d | 12. | a |
| 3. | c | 8. | a | 13. | d |
| 4. | a | 9. | b | 14. | c |
| 5. | c | 10. | b | 15. | b |
-

3. When cross cutting you:
- a. Use the same safety guard and anti-kickback attachment settings as for ripping.
 - b. Pull the blade slowly and firmly across the material.
 - c. Push the saw blade into the material, maintaining steady pressure.
 - d. None of the above.
4. In bevel ripping you should use a pusher:
- a. Only when the wood is extremely knotty.
 - b. When the wood is extremely knotty and unseasoned.
 - c. Enabling you to feed the material more rapidly.
 - d. Always, as a caution against kickback.
5. Radial overarm saws may be used for free-hand routing provided:
- a. You use the router bit with bushing.
 - b. You lock the motor in the vertical position over the center of the table.
 - c. You lock the arm and feed the material past the cutter at depths of 1/8 inch or less.
 - d. All of the above.
6. The set on each side of a saw blade:
- a. Should be even, and for average cutting should be 0.2 inch on each side.
 - b. Should be decreased for wet or green lumber to prevent binding of the blade in the wood.
 - c. Should insure the outside boundary is thinner than the blade for efficient sawdust removal.
 - d. None of the above.
7. If the electric portable grinder is used, you should:
- a. Make certain the receptacle voltage is the same as the voltage stamped on the grinder's nameplate.
 - b. Make certain the receptacle voltage is the same as the voltage stamped on the grinder's nameplate and always wear safety goggles.
 - c. Insure that the work, other than small pieces, is securely clamped in a vise.
 - d. All of the above.

8. For operation in extreme cold, you should:
- a. Refer to the lubrication guide for the proper grade of lubricant and type of antifreeze to be used.
 - b. Allow the saw motors to run at no-load for several minutes to ensure proper lubrication of motor bearings.
 - c. Gradually heat the blade before it is used.
 - d. All of the above.
9. For operation in extreme heat, you should:
- a. Insure the flow of cooling air by retaining the engine-generator panels in the closed position.
 - b. Increase the periodic lubrication services and make frequent checks of the engine coolant.
 - c. Frequently change blades, using only precooled blades.
 - d. Do none of the above.
10. Magnetic contacts should be cleaned:
- a. With a clean cloth lightly lubricated with SAE #30 engine oil.
 - b. By firmly striking them with a blunt metallic object to dislodge the dust and/or dirt.
 - c. Only when absolutely necessary.
 - d. None of the above.
11. Operation in salt water areas:
- a. Has no effect on radial overarm saws.
 - b. Reduces the requirement for cleaning and lubrication because of its corrosive properties.
 - c. Will cause the covering of wiring to deteriorate rapidly due to the action of the salt on the fabric and rubber.
 - d. Prevents use of portable electric grinders and drills.
12. Under normal operations, the following items should be checked and lubricated, as required, daily:
- a. Engine crankcase and distributor oil cup.
 - b. Generator bearing and water pump.
 - c. End cap and generator bearing.
 - d. None of the above.

13. If the engine overheats because of lack of coolant, you should:
- a. Cease any cutting operations and allow the engine to idle for 20-30 minutes, in order to cool gradually.
 - b. Rapidly refill with coolant with the engine turned off.
 - c. Allow the engine to cool, with the engine turned off, before refilling the radiator.
 - d. None of the above.
14. Which of the following is not a maintenance or safety precaution:
- a. Always correct or report mechanical deficiencies that may result in further damage to the equipment if operation is continued.
 - b. Wear loose clothing while operating the saw.
 - c. Never operate the saw without guards in place and secure.
 - d. None of the above.
15. When electrical components of the engines starting circuit are removed or installed
- a. The battery ground terminal should be disconnected from the battery terminal.
 - b. The battery ground terminal should be checked to insure it has not worked loose.
 - c. There are no safety precautions necessary since the unit includes only 2 six-volt batteries.
 - d. None of the above.
16. You would expect to use the power feed assembly primarily:
- a. When ripping long boards.
 - b. When double mitering.
 - c. When routing.
 - d. None of the above.
17. Gum and pitch should be removed from saw blades by:
- a. Cutting at high speeds.
 - b. Soaking the blades in hot water and cleaning with a rag.
 - c. Scraping with a metallic object.
 - d. All of the above.

18. Rounding the saw's blade involves:
- a. Hand filing the blade to a true round circumference.
 - b. Pressing a flat piece of jointer stone or a piece of emery wheel, lightly but firmly, against a saw blade that is rotating at full speed.
 - c. Deepening the gullets to their original depth.
 - d. None of the above.
19. The electric portable saw, which allows small sawing operations to be performed at a distance from the overarm saw, is capable of:
- a. Cross cutting.
 - b. Bevel cutting.
 - c. Ripping.
 - d. All of the above.
20. Operation in sandy or dusty conditions requires:
- a. More frequent lubrication of the saw.
 - b. Less frequent lubrication of the saw.
 - c. Unchanged (normal) lubrication of the saw.
 - d. None of the above.
21. For operation in extreme cold (minus 50 degrees Fahrenheit), arctic type antifreeze compound is placed in the saw's cooling system. Before operating the saw with arctic type antifreeze installed, the operator should dilute the antifreeze with:
- a. Inhibited glycol.
 - b. Ethylene glycol.
 - c. Nothing.
 - d. None of the above.
22. If when examining a partially cut board, you observe heel marks (pronounced marks left by the rear teeth), you should:
- a. Do nothing this is a normal condition.
 - b. Adjust the plane of the saw blade so it coincides exactly with the line of its movement.
 - c. Know the back teeth are moving in the kerf formed by the forward (down-moving) teeth which start the cut.
 - d. Cease operation and report this deficiency to the appropriate unit maintenance personnel.

23. The bevel clamp operates as a locking device to:
- a. Lock the motor and arbor in the 45-degree bevel or 90-degree vertical position.
 - b. Lock the motor and arbor when positioned in any intermediate position between the horizontal and vertical.
 - c. Both a. and b. above.
 - d. Neither a. nor b. above.
24. The frequency meter located beneath the cover plate on the top of the rear engine housing indicates:
- a. The frequency of required lubrication services.
 - b. The frequency of the 7 1/2-horsepower saw motor.
 - c. The cyclic rate of the saw generator's output voltage.
 - d. None of the above.
25. The generator is grounded, prior to beginning generator operation, by:
- a. The metallic legs of the two conveyor tables.
 - b. The single wire positive ground wiring.
 - c. Attaching the ground strap to a metal ground rod that is driven into the ground.
 - d. None of the above.

Correct Responses - Saws, Radial Overarm, Operator Test

- | | | |
|------|-------|-------|
| 1. c | 9. b | 17. b |
| 2. a | 10. c | 18. b |
| 3. b | 11. c | 19. d |
| 4. d | 12. a | 20. a |
| 5. d | 13. c | 21. c |
| 6. a | 14. b | 22. b |
| 7. b | 15. a | 23. c |
| 8. d | 16. a | 24. c |
| | | 25. c |
-

SCRAPER, EARTHMOVING, TOWED

TAM B1920	NSN 3805-00-457-3277	ID 01023E
	NSN 3805-00-973-1531	ID 01023C
	NSN 3805-00-256-3807	ID 01023F
	NSN 3805-00-139-7597	ID 01023D

OPERATOR KNOWLEDGE (AWARENESS/SAFETY) TEST

NAME:	_____	<u>SUMMARY</u>
ORGANIZATION:	_____	0-6 Wrong Satisfactory ()
DATE:	_____	7 or more Wrong Unsatisfactory ()

INSTRUCTIONS

The following items test your knowledge of the towed road scraper's capabilities, characteristics, and related safety considerations. For those 20 questions whose question numbers are circled, read each answer and place a check in the parenthesis () next to the most correct answer. Disregard those questions whose question numbers have not been circled.

-
1. The three main functioning components of the towed road scraper are the:
 a. Bowl, apron, and ejector.
 b. Bowl, apron, and rear truck.
 c. Bowl, apron, and head frame.
 d. None of the above.
 2. The rear truck assembly:
 a. Serves as the connecting member between the scraper and the prime mover.
 b. Includes a push frame that permits auxiliary pushing to obtain maximum payload.
 c. Includes the blade base and the ejector.
 d. Has the traction mast attached to it.
 3. Whenever a hose is disconnected on the towed road scraper, all openings involved must be plugged or covered immediately to:
 a. Maintain the air brake pressure at 85-105 pounds per square inch.
 b. Keep dirt or other foreign matter out of the hydraulic and air pressure systems.
 c. Prevent damage to the soft aluminum coupling threads.
 d. None of the above.

4. The power medium for operation of scraper components is:
- a. Air pressure.
 - b. Air and hydraulic pressure.
 - c. Hydraulic pressure.
 - d. None of the above.
3. The operator conducted before operation services on the towed road scraper include:
- a. Lubrication.
 - b. Draining the air reservoir.
 - c. Inspecting the tires for proper inflation (40 PSI for shipping and 30 PSI for operating).
 - d. All of the above.
6. If the towed road scraper's hydraulic hoses are properly connected:
- a. Pushing a hydraulic control lever away from the operator will result in a lowering motion of a component.
 - b. Pushing a hydraulic control lever away from the operator will result in a raising motion of a component.
 - c. Pushing a hydraulic control lever away from the operator will automatically engage the air brakes.
 - d. Pushing a hydraulic control lever away from the operator will automatically release the air brakes.
7. During operation, with a wheeled tractor prime mover that has properly connected air brakes, you should:
- a. Be sure all safety lock pins and transport pins (travel lock) are engaged.
 - b. Depend on the air brakes to hold the scraper stationary.
 - c. Not depend on the air brakes to hold the scraper stationary.
 - d. None of the above.
8. During your check before operation, you check the full action of the bowl, apron, and ejector. In doing this, the cutter edge touches the ground while the scraper is stationary. You continue to lower the bowl lever and the wheels of the scraper lift off the ground. You should:
- a. Immediately cease further operation. An unsafe condition exists.
 - b. Reinsert the safety lock pins before further operation.
 - c. Replace the traction aid cylinder.
 - d. Expect this. It is a normal condition.

9. When it is necessary to change cutting edges, the scraper is safely held in the transport position:
- a. By 85 pounds per square inch (PSI) of air pressure.
 - b. By the scraper's organic hydraulic system.
 - c. By the travel lock pins.
 - d. All of the above.
10. When loading wet sticky material where traction is poor, best results will be obtained by:
- a. Taking a thick cut and keeping the apron as low as possible to prevent mud from banking up in front.
 - b. Taking a thick cut and keeping the apron as high as possible to prevent mud from banking up in front.
 - c. Taking a thin cut and keeping the apron as high as possible to prevent mud from banking up in front.
 - d. Taking a thin cut and keeping the apron as low as possible to prevent mud from banking up in front.
11. Before performing the required operator inspection on the towed road scraper, the operator should:
- a. Check to insure the 2 air brake hoses are in the scraper tool box.
 - b. Block the wheels and be sure that the safety pins are in place.
 - c. Carefully remove the safety pins and then block the wheels.
 - d. None of the above.
12. Preventive maintenance, the responsibility of the using organization, is performed:
- a. With the aid of the operator, at weekly, monthly, quarterly and semiannual intervals.
 - b. By maintenance personnel of the applicable echelon of maintenance.
 - c. Varies according to the scheduled preventive maintenance of its prime mover.
 - d. All of the above.
13. Preventive maintenance services to be performed weekly on the towed road scraper unit include:
- a. Checking the relay-emergency valve.
 - b. Checking the brake rotochamber.
 - c. Checking the air brake system for leakage.
 - d. None of the above.

14. The correct procedure for dismounting a tire from its rim includes:
- a. Removing the valve cap.
 - b. Removing the valve core.
 - c. Insuring all air pressure has escaped from the tire.
 - d. All of the above.
15. A bent or distorted lock ring may be used to remount a tire:
- a. Only with verbal approval of the equipment chief.
 - b. Only when the subsequent operation does not include operating in extremely rocky terrain.
 - c. Only when a new lock ring is not immediately available.
 - d. Never.
16. The towed road scraper is towed and operated by a crawler or wheeled tractor that:
- a. Is capable of providing 23,000 pounds of drawbar pull.
 - b. Is equipped with the necessary hydraulic controls.
 - c. Is capable of providing 12 cubic feet per minute of air at 85 to 105 pounds per square inch for operation of the scraper brakes.
 - d. All of the above.
17. Which of the following statements is correct?
- a. The scraper is equipped with rear wheel air-operated brakes.
 - b. The scraper is equipped with front wheel air-operated brakes.
 - c. The scraper is equipped with front wheel hydraulic-operated brakes.
 - d. The scraper is equipped with rear wheel hydraulic-operated brakes.
18. If upon arriving at a field work site you observed a towed road scraper operator vigorously striking the hydraulic cylinders with a sledge hammer, you should suspect:
- a. The operator has air locks in the hydraulic cylinders that he/she is attempting to dislodge.
 - b. The operator has not lubricated his/her scraper as the Lubrication Order directs.
 - c. The operator is attempting to render the equipment inoperative prior to capture by the enemy.
 - d. None of the above.
19. The towed road scraper's brakes may be applied:
- a. By activating the trailer brake control lever on the towing tractor.
 - b. By activating the brake pedal on the towing tractor.
 - c. By activating either the trailer brake control lever or the brake pedal on the towing tractor.
 - d. None of the above.

20. Disconnecting the “emergency” air line from the tractor air supply:
- a. Has no effect on the road scraper.
 - b. Shuts off the air inlet port to prevent air escaping from the scraper reservoir and applies the scraper’s brakes.
 - c. Causes the prime mover’s (towing tractor’s) air brakes to be applied.
 - d. All of the above.
21. Before connecting the hydraulic hoses to the tractor, you should:
- a. Stop the tractor engine and work the hydraulic levers to relieve pressure in the hydraulic lines.
 - b. Continue the tractor’s engine, at a fast idle, while attaching the hydraulic hoses. Failure to do so will cause lack of positive brake controls.
 - c. Operate the tractor engine at maximum revolutions per minute (RPM) to bleed air from the hydraulic system.
 - d. Do none of the above.
22. The air brake hoses are used only if the towing tractor:
- a. Has less than 15,000 pound draw-bar pull capability.
 - b. Is a wheel-type unit.
 - c. Has an inoperative brake system.
 - d. Will be operating in hilly terrain.
23. The most efficient scraper prime mover for short hauls is the:
- a. Wheeled tractor.
 - b. Crawler tractor.
24. Which of the following is not a prescribed operating technique for the towed road scraper?
- a. Do not dump while turning.
 - b. When working on slopes, always turn uphill.
 - c. Travel over uneven or rough terrain with the ejector and apron fully raised.
 - d. All of the above.
25. When doing fine grading with the towed grader, the center cutting edge:
- a. Must be lowered slightly beyond the end cutting edges (1-3 inches).
 - b. Must be raised slightly above the end cutting edges (1-3 inches).
 - c. Should not be used.
 - d. Must be set even with the two end cutting edges.

Correct Responses - Scraper, Earthmoving, Towed, Operator Test

- | | | | | | |
|----|---|-----|---|-----|---|
| 1. | a | 9. | c | 17. | a |
| 2. | b | 10. | d | 18. | c |
| 3. | b | 11. | b | 19. | c |
| 4. | c | 12. | a | 20. | b |
| 5. | d | 13. | d | 21. | a |
| 6. | a | 14. | d | 22. | b |
| 7. | c | 15. | d | 23. | b |
| 8. | d | 16. | d | 24. | c |
| | | | | 25. | d |
-

TRACTOR, MEDIUM, FULL-TRACKED, TEREX 82-30M
TAM B2462 NSN 2410-00-832-9726 ID 06533A
OPERATOR KNOWLEDGE (AWARENESS/SAFETY) TEST

NAME:	_____	<u>SUMMARY</u>
ORGANIZATION:	_____	0-6 Wrong Satisfactory ()
DATE:	_____	7 or more Wrong Unsatisfactory ()

INSTRUCTIONS

The following items test your knowledge of the TEREX 82-30M full-tracked medium tractor's capabilities, characteristics, and related safety considerations. For those 20 questions whose question numbers are circled, read each answer and place a check in the parenthesis () next to the most correct answer. Disregard those questions whose question numbers have not been circled.

-
1. When checking the engine oil level on a tractor that has been shut down overnight, or longer, the operator should:
 - () a. Add oil if the dipstick indicates an oil level more than one-half inch below the FULL mark.
 - () b. Never operate the engine with the oil level below the LOW mark on the dipstick.
 - () c. Not overfill the crankcase, as excessive oil can cause oil foaming and overheating.
 - () d. Do all of the above.
 2. The transmission cold oil level check insures adequate transmission oil to safely start and warm up the engine. With the tractor on level ground, the oil level in the window indicator should be:
 - () a. Up to or above the quarter-full line in the window.
 - () b. Up to or above the level line or center of the window.
 - () c. Up to or above the three-quarters-full line in the window.
 - () d. None of the above.
 3. When starting the tractor, the operator should release the starter switch:
 - () a. Immediately when the engine starts.
 - () b. Within 30 seconds after the engine starts.
 - () c. As soon as the engine is idling smoothly.
 - () d. At none of the above times.

4. The operator, to avoid overheating and damaging the cranking motor:
- a. Never cranks the engine continuously for more than 30 seconds.
 - b. Allows at least 2 minutes cooling time between cranking periods.
 - c. Does both a. and b. above.
 - d. Does neither a. and b. above.
5. To determine if the Quick Start cylinder requires refilling, the operator:
- a. Activates the Quick Start control knob for 2 to 3 seconds and listens for a continuous clicking noise.
 - b. Removes the Quick Start cylinder and weighs it.
 - c. Observes the red warning indicator in the cylinder window.
 - d. Does none of the above.
6. What is the proper hot reading on the tractor's transmission oil level?
- a. Below the sight glass level line.
 - b. At or above the sight glass level line.
 - c. At the dipstick FULL mark.
 - d. No more than 1 inch above the dipstick's FULL mark.
7. The tractor's hydraulic oil check (hot oil check) should be made with:
- a. The tractor's engine shut off.
 - b. All attachments fully lowered.
 - c. All component's hydraulic lines (dozer blade, tilt strut, and ripper) fully charged.
 - d. All of the above.
8. What is the maximum amount of time that the tractor's engine should be allowed to idle?
- a. 1 minute.
 - b. 2 minutes.
 - c. 5 minutes.
 - d. 10 minutes.
9. The TEREX 82-30M tractor has how many forward gear ranges?
- a. 3.
 - b. 4.
 - c. 5.
 - d. None of the above.

10. The TEREX 82-30M tractor has how many reverse direction gear ranges?
- a . 1 .
 - b . 2 .
 - c . 3 .
 - d . 5 .
11. Coasting or free wheeling the tractor down a steep grade in neutral is authorized
- a. In the forward direction.
 - b. Only in the reverse direction.
 - c. In both the forward and reverse direction.
 - d. In neither the forward nor the reverse direction.
12. The approved method of braking the tractor while going down a steep grade in a forward direction is through:
- a. The decelerator and brakes.
 - b. Down-shifting the transmission to a lower range.
 - c. Both a. and b. above.
 - d. None of the above.
13. With both steering levers pulled all the way to the rear, the tractor would be expected to turn:
- a. Clockwise.
 - b. Counterclockwise.
 - c. Hard left.
 - d. None of the above.
14. The tractor's service brakes are inoperative when the engine is not running. The parking-emergency brake must be applied to hold the tractor stationary when the engine is stopped. The parking-emergency brake is applied by:
- a. Pulling the parking-emergency brake handle all the way out.
 - b. Pulling back on both steering levers and pushing down on the decelerator.
 - c. Pushing the brake lever shoe plate forward and down with the foot until the lever goes over center and snaps down.
 - d. Doing none of the above.

15. To raise the dozer blade, the control lever is:
- a. Pulled rearward from the HOLD position to RAISE until the desired blade height is reached.
 - b. Moved forward from the HOLD position to RAISE until the desired blade height is reached.
 - c. Moved forward to the FLOAT position.
 - d. None of the above.
16. The tractor's blade can be tilted. The tilting is powered:
- a. Electrically.
 - b. Hydraulically.
 - c. Mechanically.
 - d. None of the above.
17. The ripper control handle has three lever positions. These positions are:
- a. Hold, raise, and float.
 - b. Lower, float, and raise.
 - c. Hold, raise, and lower.
 - d. None of the above.
18. The tractor's rear-mounted winch assembly is a single drum unit equipped with _____ feet of 1 inch cable and attached hook.
- a . 50
 - b. 100
 - c. 150
 - d. 200
19. The tractor can safely operate in water depths of up to _____ feet.
- a . 2
 - b . 3
 - c . 4
 - d. 5
20. When operating in water, the operator should maintain:
- a. Fast engine speed and slow tractor speed.
 - b. Slow engine speed and fast tractor speed.
 - c. Slow engine speed and slow tractor speed.
 - d. Fast engine speed and fast tractor speed.

21. What type (weight) engine oil is recommended for use in the TEREX Medium Tractor?
- a. S.A.E. 40.
 - b. S.A.E. 30.
 - c. S.A.E. 20.
 - d. S.A.E. 10.
22. The proper battery electrolyte level is _____ inch above the battery's plates.
- a. 1/16 to 1/8.
 - b. 1/8 to 1/4.
 - c. 3/8 to 1/2.
 - d. 9/16 to 3/4.
23. The operator would remove excess corrosion from the tractor's battery by:
- a. Reporting this deficiency to the appropriate unit maintenance personnel.
 - b. Striking the battery terminals with a rubber hammer, then brushing off the loosened scales.
 - c. Using a stiff wire brush and a solution of baking soda and water.
 - d. Doing none of the above.
24. Proper tractor track tension is maintained by:
- a. Adjusting the number of track shoes.
 - b. Adjusting the pressure maintained in the recoil cylinder.
 - c. The angled flange on the final drive assembly.
 - d. All of the above.
25. The TEREX Tractor's electrical system includes:
- a. Four 12-volt batteries connected in series - parallel.
 - b. Four 12-volt batteries connected in series.
 - c. Two 12-volt batteries connected in parallel.
 - d. Two 12-volt batteries connected in series - parallel.

Correct Responses - Tractor, Medium, Full-Track, TEREX 82-30M, Operator Test

- | | | | | | |
|----|---|-----|---|-----|---|
| 1. | d | 9. | a | 17. | c |
| 2. | b | 10. | c | 18. | d |
| 3. | a | 11. | d | 19. | d |
| 4. | c | 12. | a | 20. | a |
| 5. | b | 13. | d | 21. | b |
| 6. | b | 14. | c | 22. | c |
| 7. | d | 15. | a | 23. | c |
| 8. | c | 16. | b | 24. | b |
| | | | | 25. | a |
-

TRACTOR, FULL-TRACKED WITH
MULTIPURPOSE BUCKET

TAM B2463

NSN 3805-00-140-2427

ID 07542A

OPERATOR KNOWLEDGE (AWARENESS/SAFETY) TEST

NAME:	_____	<u>SUMMARY</u>
ORGANIZATION:	_____	0-6 Wrong Satisfactory ()
DATE:	_____	7 or more Wrong Unsatisfactory ()

INSTRUCTIONS

The following items test your knowledge of the full-tracked tractor with the multi-purpose bucket's capabilities, characteristics, and related safety considerations. For those 20 questions whose question numbers are circled, read each answer and place a check in the parenthesis () next to the most correct answer. Disregard those questions whose question numbers have not been circled.

-
1. During operation with the full-tracked tractor, you notice the oil temperature gage for the torque converter indicates 280 degrees. You should:
 - () a. Note this on your daily operation report.
 - () b. Shift up to reduce the oil temperature and continue operating the tractor.
 - () c. Shift down to reduce the oil temperature. If you are already operating in the lowest gear, stop the tractor and idle the engine at approximately half throttle until the temperature is reduced.
 - () d. Do none of the above.
 2. The track speed control levers have three positions. For low speed (range) you should place the track speed control levers in the:
 - () a. Rear position.
 - () b. Center position.
 - () c. Forward position.
 - () d. None of the above.
 3. To obtain maximum hydraulic power for loader operations, the operator should:
 - () a. Position the declutch lever in the engaged position.
 - () b. Position the declutch lever in the disengaged position.
 - () c. Engage the fan-fording control lever.
 - () d. None of the above.

4. When starting the tractor's engine, you should:
- a. Check to see that the direction control levers and the track speed control levers are in neutral.
 - b. Set the parking brake.
 - c. Check to see that the stop handle and emergency stop handle are pushed in.
 - d. All of the above.
5. If you do not find any engine oil pressure indicated within 10 to 15 seconds after starting the tractor's engine, you should:
- a. Open the hand throttle two-thirds of the way and operate without a load for 5-10 minutes.
 - b. Stop the engine and investigate the cause.
 - c. Operate the engine for up to an additional 10 minutes but only at a near-stall speed.
 - d. Keep the cutout control in the disengaged position.
6. The winch direction control lever should be positioned:
- a. To the outward position for forward (POWER).
 - b. To the inward position for reverse.
 - c. To the neutral position before shifting the winch.
 - d. All of the above.
7. To make a left gradual turn while operating the tractor, you should:
- a. Place the left-hand track speed control lever to low and shift the right-hand track speed control lever to high.
 - b. Place the left-hand track speed control lever to high and the right-hand track speed control lever to low.
 - c. Place the left-hand direction control lever to the neutral position.
 - d. Place the right-hand direction control lever to the neutral position.
8. Proper fording operation actions include:
- a. Attempting fords of only up to 72 inches.
 - b. Insuring the fan remains engaged while fording.
 - c. Shifting the transmission into the low-speed range and operate the engine at a near-stall speed to avoid backwashes.
 - d. None of the above.

9. Upon completion of winching operations in freezing weather, the operator should:
- a. Apply the winch brake before leaving the winch to stand overnight.
 - b. Be sure the winch brake is released before leaving the winch to stand overnight.
 - c. Apply the winch brake after winding in the wire rope.
 - d. Release the winch brake, but only after paying-out the wire rope.
10. When connecting the quick-disconnect hydraulic connections so as to use a towed scraper with the tractor, the hoses for lowering (down) functions are connected to the:
- a. Upper connections.
 - b. Lower connections.
 - c. The middle connections.
 - d. None of the above.
11. The safety stops carried on the loader are used to:
- a. Prevent inadvertent engagement of the starter.
 - b. Prevent a complete drop of the bucket if accidentally released.
 - c. Insure positive braking on steep grades.
 - d. Do none of the above.
12. To perform a counter-rotation turn to the left, the operator must:
- a. Place both track speed control levers in the low-speed position and the direction control levers in reverse.
 - b. Place both track speed control levers in the low-speed position and the direction control levers in forward.
 - c. Place both track speed control levers in the low-speed position, the left control lever in reverse and the right control lever in forward.
 - d. Place both track speed control levers in the low-speed position, the left control lever in forward and the right control lever in reverse.
13. After servicing the tractor's air filter, the operator should:
- a. Record this fact in the log book.
 - b. Push the reset button on the top of the air cleaner indicator.
 - c. Disengage the fan drive.
 - d. None of the above.

14. The tractor should receive a fresh water flush and have the track assembly lubricated:
- a. Within 12 hours after beach and salt water operations.
 - b. After each fording.
 - c. As part of the scheduled quarterly servicing.
 - d. None of the above.
15. Before performing any maintenance or testing of the tractor's electrical circuits:
- a. The area surrounding the tractor should be cleared of nonessential personnel.
 - b. The master and ignition switches must be in the ON position.
 - c. The batteries ground connection should be disconnected.
 - d. All of the above.
16. The bucket selector gage indicates the moldboard blade angle for the basic uses of the multipurpose bucket. The four positions are "D", "S", "B", and "C". When using the bucket for grading, bulldozing, and backfilling operations, you should have the bucket selector gage set to:
- a. "D"
 - b. "S"
 - c. "B"
 - d. "C"
17. When using the bucket selector gage set to position "B", you would expect to be engaged in:
- a. Grading, spreading and sodcutting.
 - b. Conventional loading.
 - c. Clamshell operation.
 - d. None of the above.
18. If the depth gage, which indicates the moldboard blade cutting depth while in the "scraper" position, is on "O", you would expect the clam:
- a. To be open.
 - b. To be completely closed.
 - c. To be off the ground.
 - d. To be overfull.

19. You are preparing to conduct a winching operation when you notice that the free-spool control knob has been pulled outward, you should:
- a. Disregard the fact and conduct the desired winching.
 - b. Report the fact to organizational maintenance at the end of the work day.
 - c. Cease operations immediately. Only restart the tractor after the cause of the malfunction has been determined.
 - d. Push the control knob back in.
20. When the loader is not in operation, the bucket should always:
- a. Be no higher off the ground than a horizontal position.
 - b. Be elevated above the ground, reducing the risk of it being stolen.
 - c. Be fully elevated (10 feet 9 inches).
 - d. Rest on the ground.
21. The multipurpose bucket consists of the following major components:
- a. Frame, moldboard blade, and clam.
 - b. Moldboard blade and clam.
 - c. Bucket selector gage and moldboard blade.
 - d. Depth gage, moldboard blade, and clam.
22. The loader's electrical system includes:
- a. Four 12-volt batteries.
 - b. A master switch located between the batteries and all circuits except the slave receptacle.
 - c. All of the above.
 - d. None of the above.
23. The loader's main hydraulic system operates the:
- a. Loader bucket.
 - b. Converter.
 - c. Transmission.
 - d. All of the above.
24. The loader's track is tightened:
- a. Automatically, by self-adjusting air pressure.
 - b. Only by organizational-level maintenance personnel.
 - c. Manually, by pumping grease into the fitting at the front of the hydraulic track adjuster.
 - d. Only during quarterly maintenance.

25. The loader's engine is designed to turn a fixed load at a fixed speed. The loader's transmission allows the operator to manually balance the engine torque to the load by means of different gear ratios. If the operator is too slow or guesses wrong in trying to balance the gear ratio with the load, the:

- a. Engine lugs down and stalls.
- b. The slave receptacle shorts out, popping the circuit breaker.
- c. The stop handle pops out.
- d. None of the above.

Correct Responses - Tractor, Full Tracked with Multipurpose Bucket, Operator Test

1. c
2. a
3. a
4. d
5. b
6. d
7. c
8. d

9. b
10. a
11. b
12. c
13. b
14. a
15. c
16. a

17. b
18. b
19. d
20. d
21. b
22. c
23. a
24. c
23. a

TRACTOR, RUBBER-TIRED, ARTICULATED STEER
TAM B2465 NSN 2420-01-069-6903 ID 07075C
OPERATOR KNOWLEDGE(AWARENESS/SAFETY) TEST

NAME:	_____	<u>SUMMARY</u>
ORGANIZATION:	_____	0-6 Wrong Satisfactory ()
DATE:	_____	7 or more Wrong Unsatisfactory ()

INSTRUCTIONS

The following items test your knowledge of the rubber-tired tractor's capabilities, characteristics, and related safety considerations. For those 20 questions whose question numbers are circled, read each answer and place a check in the parenthesis() next to the most correct answer. Disregard those questions whose question numbers have not been circled.

-
1. The industrial, wheeled tractor, without application of a deep water fording kit, is capable of fording depths of up to:
 - () a. 24 inches.
 - () b. 36 inches.
 - () c. 48 inches.
 - () d. 60 inches.
 2. The industrial, wheeled tractor's electrical system is:
 - () a. A 24-volt system with a negative ground.
 - () b. A 12-volt system with a positive ground.
 - () c. A 12-volt system with a negative ground.
 - () d. A 24-volt system with a positive ground.
 3. Which of the following is not a standard safety precaution with the industrial, wheeled tractor?
 - () a. Always perform a visual check and the necessary maintenance "before operation" services before operating the tractor.
 - () b. Only mount a moving tractor if it is moving away from you, not towards you.
 - () c. Never leave the tractor without first lowering the attachment to the ground.
 - () d. Always set the parking brake when the tractor is not in operation.

4. When attempting to start the tractor, the operator should not operate the starter continuously, for more than:
- a. 1 minute.
 - b. 45 seconds.
 - c. 30 seconds.
 - d. 15 seconds.
5. After an unsuccessful starting attempt, the operator should allow a cooling period before attempting another start of at least:
- a. 1 minute.
 - b. 2 minutes.
 - c. 3 minutes.
 - d. 5 minutes.
6. After starting the tractor's engine successfully, you begin normal warmup of the unit. After 2 minutes you note the engine oil pressure gage has not begun indicating positive pressure. You should:
- a. Note this fact on your daily operator's report.
 - b. Report this fact to organizational maintenance so they can change the inoperative gage.
 - c. Stop the engine and investigate the cause.
 - d. Do nothing. This gage will not provide a reading until you move the tractor under its own power.
7. A cold weather starting-aid control is provided to assist with cold weather starting of the tractor. This control:
- a. Preheats the fuel before injecting it into the engine.
 - b. Preheats the tractor's oil and coolant so less power is required to turn over the engine.
 - j. Preheats the tractor's engine oil.
 - d. Provides a measured shot of fuel into the engine.
8. The tractor's engine should be allowed to cool uniformly and gradually after operating. This is accomplished by:
- a. Allowing the engine to idle at least 2 minutes before stopping the engine.
 - b. Keeping the vent doors and engine shrouds open for 30 minutes after stopping the engine.
 - c. The tractor's automatic forced air cooling system.
 - d. None of the above.

9. The engine Emergency Shutdown handle is used to stop the tractor's engine if normal shutoff controls fail. This handle:
- a. Is never used to shut off the engine under normal conditions.
 - b. Is activated by pulling the handle out as far as it will go.
 - c. Cuts off the combustion air supply from the blower.
 - d. All of the above.
10. The maximum allowable speeds in the LOW range for forward and reverse are:
- a. 6 miles per hour forward, 4 miles per hour in reverse.
 - b. 8 miles per hour forward, 6 miles per hour in reverse.
 - c. 4 miles per hour in forward and reverse.
 - d. None of the above.
11. The maximum allowable speed in the HIGH range is:
- a. 15 miles per hour.
 - b. 20 miles per hour.
 - c. 25 miles per hour.
 - d. 27 miles per hour.
12. Moving the tine control lever to the right will:
- a. Move the tines inward, or closer together.
 - b. Move the tines outward, or further apart.
 - c. Tilt the tines to the right.
 - d. Do none of the above.
13. When operating in extremely cold weather and stopping for short shutdown periods, the operator will retard the loss of engine and radiator heat by:
- a. Parking the tractor in a sheltered spot out of the wind.
 - b. Parking the tractor facing into the wind.
 - c. Either parking the tractor in a sheltered spot out of the wind or parking the tractor facing into the wind.
 - d. Doing none of the above.
14. If, during operation you note the converter oil temperature gage is in the red zone, you should:
- a. Cease operations immediately. Locate the fault, and correct it, before restarting the tractor.
 - b. Notify organizational maintenance so they can troubleshoot the gage.
 - c. Shift to the next lower gear.
 - d. Do none of the above.

15. The forklift is made up from 2 major assemblies. They are the:
- a. Load carriage assembly and the frame carriage assembly.
 - b. Bucket assembly and the load carriage assembly.
 - c. Frame carriage assembly and the bucket assembly.
 - d. Bucket assembly and the cutting edge.
16. The industrial, wheeled tractor has a forklift whose maximum lifting capacity is:
- a. 10,000 pounds.
 - b. 12,000 pounds.
 - c. 14,000 pounds.
 - d. 17,500 pounds.
17. When transporting a load on the forklift, the operator should:
- a. Maintain the boom in the fully raised position.
 - b. Always face the direction of travel. If the load size restricts forward visibility, carry the load in reverse for a clear view while traveling.
 - c. Allow personnel to ride on the tines if separated from other materials by more than 2 feet.
 - d. Do none of the above.
18. The forklift Oscillating Control lever:
- a. Tilts the fork upward or downward at any height for carrying and dumping loads.
 - b. Provides for lateral adjustment of the load carriage.
 - c. Adjusts the horizontal distances between the tines.
 - d. Adjusts the tilt of the load carriage either left or right to a maximum of 6 degrees from the horizontal.
19. When carrying a load in the forklift, the operator should raise the fork:
- a. Just high enough to clear any obstacles while the load is being carried.
 - b. To the expected stack height position.
 - c. Until the boom is in the fully raised position.
 - d. To none of the above positions.
20. The bucket, scoop-type loader, normally used with the tractor has a capacity of:
- a. 2 cubic yards.
 - b. 1/2% cubic yards.
 - c. 3 cubic yards.
 - d. 3 1/2 cubic yards.

21. The bucket's replaceable components are attached to the bucket:
- a. By specially tempered nuts and bolts.
 - b. With specially torqued bolts.
 - c. By welding.
 - d. By none of the above.
22. The bucket's rated operating load capacity is:
- a. 5,000 pounds.
 - b. 7,500 pounds.
 - c. 10,000 pounds.
 - d. None of the above.
23. When transporting loads in the bucket, the bucket should be carried:
- a. As close to the ground as practical, about 18 inches above the ground.
 - b. At a height so the load can be dumped on the pile without having to raise the bucket.
 - c. With the boom in the fully raised position.
 - d. In none of the above positions.
24. The tractor's bucket should be washed:
- a. Whenever rust appears on it.
 - b. Whenever it is scheduled for periodic maintenance.
 - c. After each fording operation in salt water.
 - d. Whenever the tractor is washed.
25. Whenever the bucket is removed from the tractor, the operator should also remove:
- a. The actuator rod.
 - b. The tilt cylinder.
 - c. The lift arm.
 - d. None of the above.

Correct Responses - Tractor, Rubber-Tired, Articulated Steer, Operator Test

- | | | | | | |
|----|----------|-----|---|-----|---|
| 1. | d | 9. | d | 17. | b |
| 2. | a | 10. | c | 18. | d |
| 3. | b | 11. | d | 19. | a |
| 4. | c | 12. | b | 20. | b |
| 5. | b | 13. | c | 21. | c |
| 6. | c | 14. | c | 22. | b |
| 7. | d | 15. | a | 23. | a |
| 8. | a | 16. | a | 24. | d |
| | | | | 25. | a |
-

TRUCK, FORKLIFT, ROUGH TERRAIN, MC4000
TAM B2565 NSN 3930-00-415-0098 ID 04060B
OPERATOR KNOWLEDGE (AWARENESS/SAFETY) TEST

NAME:		<u>SUMMARY</u>
ORGANIZATION:		0-6 Wrong Satisfactory ()
DATE:		7 or more Wrong Unsatisfactory ()

INSTRUCTIONS

The following items test your knowledge of the 4000-pound, rough terrain forklift's capabilities, characteristics, and related safety considerations. For those 20 questions whose question numbers are circled, read each answer and place a check in the parenthesis () next to the most correct answer. Disregard those questions whose question numbers have not been circled.

-
1. You are preparing to start the 4000-pound rough terrain forklift truck when you observe the BATTERY-GENERATOR indicator's pointer in the yellow block (engine is not running), you:
 - () a. Should immediately turn off all switches, locate, and correct the cause of this discrepancy.
 - () b. Know the batteries are properly charged and at the correct voltage.
 - () c. Should note this fact on your daily operator's report.
 - () d. None of the above.

 2. To start the 4000-pound, rough terrain forklift truck, the operator should:
 - () a. Set the parking brake.
 - () b. Place the transmission shift lever in neutral.
 - () c. Check to see that the stop handle and emergency stop handle are pushed in.
 - () d. All of the above.

 3. In starting the engine, the starter should not be
 - () a. Operated for more than 30 seconds at a time.
 - () b. Used at the same time as the cold weather starting aid.
 - () c. Released until black exhaust smoke is observed at the top of the exhaust pipe.
 - () d. All of the above.

4. If, within 10 to 15 seconds after starting the engine, there is no oil pressure indicated on the oil pressure gage, you should:
- a. Not be alarmed. This is a normal condition.
 - b. Report the fact on your daily operation report so the gage can be replaced at the next scheduled maintenance.
 - c. Stop the engine and investigate the cause.
 - d. None of the above.
3. When operating the rough terrain forklift on hard surface terrain or roads, or when operating at speeds in excess of 10 miles per hour, the operator should maintain a tire inflation pressure of:
- a. 45 pounds per square inch, the normal tire pressure.
 - b. Only 30 pounds per square inch, to improve traction.
 - c. 45 pounds per square inch in the front tires for steering traction and 30 pounds per square inch in the rear tires for “softness” of ride.
 - d. None of the above.
6. The inching control should not be used while operating on:
- a. Low range.
 - b. High range.
 - c. Reverse range.
 - d. All of the above.
7. The normal transmission temperature operating range is 180-220 degrees Fahrenheit. If, while operating the rough terrain forklift, you notice this temperature has reached 250 degrees Fahrenheit, you should:
- a. Remove the radiator grille and towing bar before continuing operations.
 - b. Shift to neutral and operate the engine at approximately 1000-1500 revolutions per minute for several minutes.
 - c. Pull out the fuel shutoff control handle, turn off the ignition and master switches, and then push the fuel shutoff handle in.
 - d. None of the above.
8. Under what conditions is it permissible to travel with the load elevated higher than necessary for the terrain to be traveled, with the load at the outer end of the forks, and the load not tilted back?
- a. When the load is less than the rated 4000-pound capacity of the forklift.
 - b. When operating on hard, level surfaces.
 - c. During regularly scheduled load check-tests.
 - d. None of the above.

9. Which of the following is not done when preparing to tow the forklift?
- a. Release the catch on the top of the radiator guard and lower the towing bar into position.
 - b. Attach the towing bar to the towing vehicle.
 - c. Reinsert the shipping lock pin.
 - d. Open the steering bypass valve and remove the center drive shaft.
10. Towing of the rough terrain 4000-pound forklift is authorized at speeds of:
- a. 15 miles per hour.
 - b. 25 miles per hour.
 - c. 35 miles per hour.
 - d. All of the above.
11. Many general problems are encountered when operating the 4000-pound, rough terrain forklift in extremely cold conditions. Which of the following problems is not normally encountered in cold weather operations?
- a. Lubricants thicken or congeal.
 - b. Batteries' efficiency is reduced and they may freeze.
 - c. Mildew forms more rapidly.
 - d. Fuels do not readily vaporize to form the combustible mixture necessary for starting.
12. Which of the following actions will help the forklift to operate more effectively in extreme heat?
- a. Checking the coolant level at frequent intervals and keeping the radiator cap tight.
 - b. Checking and adjusting fan belt tension frequently.
 - c. Service the air cleaner at more frequent intervals.
 - d. All of the above.
13. When operating in rainy or humid conditions, the operator would not be expected to:
- a. Dry off the seat and wiring to prevent formation of mildew.
 - b. Service the fuel filters more frequently than normal.
 - c. Keep the fuel tank full at all times.
 - d. None of the above.

14. When operating the forklift on soft sand at slow speeds (not exceeding 10 miles per hour), the operator may:
- a. Decrease the tire inflation pressure to 30 pounds per square inch for improved traction.
 - b. Tilt the load out beyond the vertical position of the mast when elevated, even when not over the stack.
 - c. Make direct shifts from the reverse to high forward ranges.
 - d. All of the above.
15. The master switch controls all electrical circuits except:
- a. The slave receptacle.
 - b. The blackout lights.
 - c. The headlights.
 - d. All of the above.
16. You would drain the axles, engine, and transmission lubricants and hydraulic oil from a running forklift only when:
- a. Preparing the forklift for quarterly maintenance.
 - b. Purging contaminated lubricants and hydraulic oil.
 - c. Rendering the tractor inoperative to prevent its use by an enemy.
 - d. None of the above.
17. The tractor's forklift is operated by:
- a. Compressed air which is developed by the compressor connected directly to the engine.
 - b. The main hydraulic system.
 - c. Electricity produced from the 100-kilowatt generator-alternator driven by the engine.
 - d. None of the above.
18. The Lubrication Instruction (LI-04060B) for the 4000-pound, rough terrain forklift specifies, "Check level daily and fill as necessary" or "check oil level daily. Add engine oil as necessary" for the:
- a. Engine crankcase and hydraulic reservoir.
 - b. Hydraulic reservoir and differential drain.
 - c. Engine crankcase, hydraulic reservoir, and transmission.
 - d. All of the above.

19. Which of the following oil levels are checked while the engine is running?
- a. The engine oil.
 - b. The transmission oil.
 - c. The hydraulic oil.
 - d. All of the above.
20. The stowage compartment for tools and other material for the 4000-pound, rough terrain forklift, is found:
- a. Under the seat.
 - b. Under the battery box lid.
 - c. On the right flange under the engine hood cover.
 - d. None of the above.
- NOTE : Questions 21-25 apply only to those forklifts that have been modified by modification instructions MI-04060B-35/ , enabling the forklift to push or pull the M 198 howitzer or similar type vehicles for short distances and to manipulate the M 198 howitzer over rough terrain.
21. The primary components of the Product Improvement Package (PIP Kit) which allow the 4000-pound forklift to push or pull the M 198 howitzer are:
- a. A winch, towing system, and brake system.
 - b. A towing system and hydraulic tilt cylinders.
 - c. A hydraulic tilt cylinder and towing system.
 - d. None of the above.
22. To insure that damage is not caused to the tractor by inadvertent starting of the winch assembly, the operator should:
- a. Insure the winch clutch is engaged when the winch assembly is not in use.
 - b. Insure that the winch clutch is disengaged when the winch assembly is not in use.
 - c. Keep the winch assembly switch in either of the two outboard positions.
 - d. None of the above.

23. Before towing the howitzer, the forklift truck operator should:
- a. Have observed the warning light when the air pressure gage registered from 54-66 pounds per square inch.
 - b. Have heard the alarm sound when the air pressure gage registered from 54-66 pounds per square inch.
 - c. Have operated the brake valve and emergency brake valve, checking operation of the howitzer's brakes.
 - d. All of the above.
24. When towing the howitzer and it is necessary to stop, the howitzer's air brakes and the tractor's brakes should be:
- a. Applied sequentially, the more powerful air brakes first, then the tractor's brakes, to prevent jack-knifing.
 - b. Applied sequentially, the tractor's brakes first, then the howitzer's air brakes, so as not to rupture the brake cylinders.
 - c. Applied at the same time.
 - d. None of the above.
25. When winching, for the winch to hold the rated load, the cable must be wrapped around the drum at least:
- a. One complete wrap.
 - b. Two complete wraps.
 - c. Three complete wraps.
 - d. Five complete wraps.

Correct Responses - Truck, Forklift, Rough Terrain, MC4000, Operator Test

- 1. b
- 2. d
- 3. a
- 4. c
- 5. a
- 6. b
- 7. b
- 8. d

- 9. c
- 10. d
- 11. c
- 12. d
- 13. d
- 14. a
- 15. a
- 16. c

- 17. b
- 18. c
- 19. b
- 20. a
- 21. a
- 22. b
- 23. d
- 24. c
- 25. d

REVERSE OSMOSIS WATER PURIFICATION UNIT
TAM 02604 NSN TBA ID TBA
OPERATOR KNOWLEDGE (AWARENESS/SAFETY) TEST

NAME :	_____	<u>SUMMARY</u>
ORGANIZATION:	_____	0-6 Wrong Satisfactory ()
DATE:	_____	7 or more Wrong Unsatisfactory ()

INSTRUCTIONS

The following items test your knowledge of the reverse osmosis water purification unit's capabilities, characteristics, and related safety considerations. For those 20 questions whose question numbers are circled, read each answer and place a check in the parenthesis () next to the most correct answer. Disregard those questions whose question numbers have not been circled.

-
1. The unit's rated capability to process raw water into drinkable water is:
 - () a. 10 gallons per minute or 600 gallons per hour.
 - () b. 10 gallons per hour or 240 gallons per day.
 - () c. 37.8 liters per hour.
 - () d. None of the above.

 2. The two collapsible tanks, used to store the drinkable water produced by the unit, can hold:
 - () a. Up to a total of 300 gallons.
 - () b. Up to a total of 800 gallons.
 - () c. Up to a total of 1500 gallons.
 - () d. Up to a total of 3000 gallons.

 3. The unit's piping is color-coded to identify its function. Raw water is identified by a black band. Product (drinkable) water is identified by a:
 - () a. Red band.
 - () b. Yellow band.
 - () c. Blue band.
 - () d. Purple band.

4. The two air hose connectors, used to connect the towing vehicle's brake system to the unit's trailer, are connected to couplings on the trailer when the trailer is not hooked up to a prime mover to:
- a. Insure operation of the trailer's brakes.
 - b. Prevent damage and contamination.
 - c. Provide positive brake and stop light connection.
 - d. All of the above.
5. The turbidity tube is used to:
- a. Measure the total dissolved solids in raw and product water.
 - b. Draw samples at various stages of purification and to empty water from the unit before moving.
 - c. Examine the clarity of the filtered water.
 - d. Do none of the above.
6. When checking tension on the unit's 5 V-belts, the operator should:
- a. Be able to push the belts down only one half inch at the center of the span.
 - b. Be able to push the belts down only 1 inch at the center of the span.
 - c. Be able to push the belts down so that they just touch in the center of the span.
 - d. Do none of the above.
7. When selecting an operating site for the unit, the operator should:
- a. Park the unit upstream from camp, if a stream is to be used as the raw water source.
 - b. Park the unit within 75 feet of the raw water source.
 - c. Select solid, fairly level ground.
 - d. Do all of the above.
8. When making readings on the total dissolved solids meter (TDS), the operator should:
- a. Initially set the meter to the lowest scale to prevent damage to the meter.
 - b. Rinse the cell cup of the TDS meter and the RE-10 range extender three times with source water.
 - c. Multiply the meter reading by 100 before recording it.
 - d. Thoroughly rinse the cell cup and range extender in source water after completing the reading.

9. When attaching the float to the strainer you should provide enough rope to:
- a. Allow the strainer to go under water but not touch the bottom.
 - b. Allow the strainer to just touch the bottom.
 - c. Keep the strainer partially surfaced to ensure proper aeration.
 - d. Do none of the above.
10. If after mixing the chlorine solution (brine, calcium hypochlorite) you observe white particles in the solution, you should:
- a. Increase the calcium hypochlorite.
 - b. Decrease the calcium hypochlorite (add brine).
 - c. Do nothing, this is a normal occurrence.
 - d. Do none of the above.
11. For proper grounding, the ground rod should be driven into the ground about:
- a. 3 feet.
 - b. 6 feet.
 - c. 9 feet.
 - d. 12 feet.
12. In preparing the unit for operation, the operator:
- a. Opens all seven drains and closes all five vent valves.
 - b. Closes all seven drains and opens all five vent valves.
 - c. Opens all seven drains and five vent valves.
 - d. Does none of the above.
13. The backwash cycle should begin on the unit after:
- a. 8 continuous hours of operation.
 - b. The multimedia filter gage rises 5 pounds per square inch differential (psid) above that recorded at start-up.
 - c. 20 hours of operation.
 - d. After the multimedia filter gage rises 5 pounds per square inch differential above recorded reading at startup or after 20 hours of operation.
14. The reverse osmosis water purification unit has two automatic safety valves, the:
- a. Brine tank gate valve and the product water tank gate valve.
 - b. High-pressure relief valve and the pulse dampener.
 - c. Rupture disc assembly and the pulse dampener.
 - d. High-pressure relief valve and the rupture disc assembly.

15. If the high-pressure relief valve ever activates during operation, the operator should:
- a. Notify organizational maintenance.
 - b. Immediately press the Push Emergency Stop Switch.
 - c. Check to see if the element cleaning switch is in the OFF position.
 - d. Do all of the above.
16. If the rupture disc assembly ruptures during operation, the operator should:
- a. Press the Push Emergency Stop Switch.
 - b. Open the Regulate Product Flow valve.
 - c. Replace the Rupture Disc and change the reverse osmosis elements.
 - d. Do all of the above.
17. If, after the generator applies power to the unit, the yellow Low Pressure lamp illuminates and the unit continues to operate, the operator should:
- a. Push the Emergency Stop button.
 - b. Notify organizational maintenance.
 - c. Do nothing. This is a normal occurrence.
 - d. Observe closely to see if the yellow lamp turns to red.
18. Under normal operations, the R.O. Pressure PSI gage should not go:
- a. Above 800 pounds per square inch.
 - b. Below 800 pounds per square inch.
 - c. Below 375 pounds per square inch.
 - d. To any of the above indicated ranges.
19. To avoid damage to the unit's controls, when starting backwash operations, the operator should not hold the Start Backwash switch up for more than:
- a. 5 seconds.
 - b. 15 seconds.
 - c. 30 seconds.
 - d. 1 minute.
20. The reverse osmosis elements must be cleaned:
- a. Once a week.
 - b. After 140 hours of operation.
 - c. Whenever the pressure in the reverse osmosis vessels shown on R .O. Pressure P.S.I. indicator rises to either 900 for seawater or 600 for fresh water.
 - d. All of the above.

21. The TDS meter (total dissolved solids) is a calibrated meter that measures how much:
- a. Alkalinity is present in a sample of water.
 - b. Electric current can flow through a sample of water.
 - c. Acidity is present in a sample of water.
 - d. Salt is present in a sample of water.
22. When connecting the unit's trailer to its prime mover, the operator can mechanically increase the lunette's height by:
- a. Reducing air pressure in the prime mover's tires.
 - b. Raising the unit's rear trailer jacks.
 - c. Use of the unit's compressed air pressure.
 - d. None of the above.
23. After fording, the operator should:
- a. Remove the unit's four drain plugs.
 - b. Wash the trailer with fresh water.
 - c. Wash the trailer with fresh water and lubricate the entire unit in accordance with instructions contained in its Lubrication Order.
 - d. Do all of the above.
24. If the nuclear or chemical cartridges should ever be used, they would be inserted:
- a. Between the strainer and the unit.
 - b. Between the booster pump and the cartridge filter.
 - c. Between the two product water tanks.
 - d. In none of the above locations.
25. The reverse osmosis water purification unit mounts a generator that is rated at:
- a. 15 kilowatts.
 - b. 30 kilowatts.
 - c. 60 kilowatts.
 - d. 100 kilowatts.

Correct Responses - Reverse Osmosis Water Purification Unit, Operator Test

- | | | |
|------|-------|-------|
| 1. a | 9. a | 17. a |
| 2. d | 10. c | 18. a |
| 3. c | 11. c | 19. a |
| 4. b | 12. b | 20. d |
| 5. c | 13. d | 21. b |
| 6. a | 14. d | 22. d |
| 7. d | 15. b | 23. c |
| 8. b | 16. d | 24. c |
| | | 25. b |
-

WATER PURIFICATION EQUIPMENT SET, MOBILE

TAM B2605

NSN 4610-00-912-3519

ID 04792A

NSN 4610-00-649-8386

ID 04461A

OPERATOR KNOWLEDGE (AWARENESS/SAFETY) TEST

NAME:	_____	<u>SUMMARY</u>
ORGANIZATION:	_____	0-3 Wrong Satisfactory ()
DATE:	_____	4 or more Wrong Unsatisfactory ()

INSTRUCTIONS

The following items test your knowledge of the mobile, water purification equipment set's capabilities, characteristics, and related safety considerations. For those 10 questions whose question numbers are circled, read each answer and place a check in the parenthesis () next to the most correct answer. Disregard those questions whose question numbers have not been circled.

-
1. When operating the mobile water purification equipment set, you should:
 - () a. Protect your eyes from direct contact with the chemical and solution mix.
 - () b. Protect your skin from direct contact with the chemical and solution mix.
 - () c. Avoid inhaling chemical powder.
 - () d. All of the above.
 2. While operating the mobile water purification equipment set, you observe, through the sight glass, debris, mud, and air bubbles in the raw water. You should:
 - () a. Continue operation. This is a normal condition.
 - () b. Cease operation immediately; the set is malfunctioning.
 - () c. Relocate the raw water strainer and float.
 - () d. None of the above.
 3. Under normal operating conditions, you should start the erdlator agitator drive motor:
 - () a. Before the flow of raw water begins into the set.
 - () b. After starting the raw water pump but before the water arrives in the erdlator tank.
 - () c. Only after at least 1 foot of water is in the erdlator tank.
 - () d. None of the above.

4. The filter run is:
- a. The plastic guard leading into the filter vent.
 - b. The time the filter is in operation from the time the precoat has been added until the filter elements must be backwashes.
 - c. The wire screen that holds the filter cake.
 - d. None of the above.
5. The aspirator's function is to:
- a. Liberate dissolved gases in the raw water.
 - b. Control the water's rate of flow from the filter.
 - c. Drain waste from the filter.
 - d. All of the above.
6. Operations in extreme cold are complicated because:
- a. Chemical reactions are slower in cold water.
 - b. Suspended matter settles more slowly in cold water.
 - c. There is a danger of freezing when there is not a continuous water demand.
 - d. All of the above.
7. When operating in extremely cold weather, condensation of moisture inside the fuel tank is best controlled by:
- a. Adding undiluted kerosene to the crankcase.
 - b. Keeping the fuel tanks as full as possible.
 - c. More frequent cleaning of the cooling fins.
 - d. None of the above.
8. The static electricity and current leakage from the generator that builds up in the van body and generator shielding can cause injury or death. The best protection against this static and current leakage is:
- a. Always wearing rubber-soled boots/shoes.
 - b. Always wearing rubber-soled boots/shoes and issued work gloves.
 - c. To electrically ground the van and generator by driving long metal ground rods into the earth near the vehicles.
 - d. Clear the work area of all nonessential personnel.

9. Which of the following is not a true raw water pump limitation?
- a. The raw water pump must be placed no further than 50 feet from the water purification unit.
 - b. The maximum suction lift for a single raw water pump is 30 feet.
 - c. The maximum suction lift for two raw water pumps, in series, is 40 feet.
 - d. All of the above.
10. The unit's Hunter heater is used solely for:
- a. Maintaining a constant slurry temperature.
 - b. Protection of operator personnel during inclement conditions.
 - c. Maintaining a water storage tank temperature above 32 degrees Fahrenheit.
 - d. None of the above.
11. The operator will perform after operation services on the water purification equipment set:
- a. After every operating period and whenever operated for an 8 hour period.
 - b. After every operating period.
 - c. At the earliest opportunist y, after 12 hours of nonstop operation.
 - d. None of the above.
12. The water purification equipment set is scheduled for quarterly maintenance:
- a. Every 3 months.
 - b. At 3 month intervals after the first major equipment modification.
 - c. After every 250 hours of operation.
 - d. Every 3 months or 250 hours of operation, whichever occurs first.
13. Lubrication of the water purification equipment set should be accomplished:
- a. As specified in the Lubrication Instruction.
 - b. After washing the equipment.
 - c. As soon as practicable after exposure to salt water.
 - d. All of the above.
14. Electrical insulating oil should be applied to the water purification equipment set:
- a. Only as specified in the Lubrication Instruction.
 - b. Never.
 - c. Only by depot overhaul personnel.
 - d. Only as required by Modification Work Order.

15. The water purifying equipment consists primarily of:
- a. A water treatment section.
 - b. A water treatment and filter sections.
 - c. A water treatment section, a filter section, and the necessary valves, piping and controls.
 - d. None of the above.



Correct Responses - Water Purification Equipment Set, Mobile, Operator Test

1. d
2. c
3. c
4. b
5. a

6. d
7. b
8. c
9. b
10. b

11. a
12. d
13. d
14. a
15. c

DISTILLATION UNIT, WATER

TAM U3080

NSN 4620-00-089-3913

ID 01274D

OPERATOR KNOWLEDGE (AWARENESS/SAFETY TEST)

NAME:	_____	<u>SUMMARY</u>
ORGANIZATION:	_____	0-6 Wrong Satisfactory ()
DATE:	_____	7 or more Wrong Unsatisfactory ()

INSTRUCTIONS

The following items test your knowledge of the Water Distillation Unit's capabilities, characteristics, and related safety considerations. For those **20** questions whose question numbers are circled, read each answer and place a check in the parenthesis () next to the most correct answer. Disregard those questions whose question numbers have not been circled.

-
- When filling the distillation unit's fuel tank, you should:
 - a. Always provide a nonmetallic contact between the fuel container and the fuel tank to avoid the danger of electrical current flows.
 - b. Never provide a nonmetallic contact between the fuel container and the fuel tank as it will short-out the electrical powered fuel gauge.
 - c. Always provide a metallic contact between the fuel container and the fuel tank to avoid the danger of generating a spark.
 - d. None of the above.
 - You should not operate the distillation unit in a building unless:
 - a. The floor of the building is less than 30 feet above the level of the water source.
 - b. You are using gravity flow for your feed water supply.
 - c. The exhaust gas, which contains carbon monoxide, is piped outside.
 - d. None of the above.
 - The water distillation unit is designed to accept feed water:
 - a. From a supply tank via gravity flow.
 - b. From a feed water source via a feed pump, provided the lift does not exceed 8 feet.
 - c. Into the feed water strainer.
 - d. All of the above.

4. For operational purposes, the distillation unit should be:
- a. Located close to the feed water supply.
 - b. Located in an open, damp area for cooling purposes.
 - c. Located on a level surface.
 - d. Answer a and b.
 - e. Answer a and c.
5. If the distillation unit is to remain in one position for more than 40 hours, you should:
- a. Build a foundation of heavy planking.
 - b. Block up the axle at both sides to remove the weight from the tires.
 - c. Block up under the wheels and adjust the length of the front end support.
 - d. Not connect the feed water supply to the feed water strainer.
6. Under normal operating procedures, the feed pump is primed:
- a. Only if the feed pump is used to lift the feed water from the supply source.
 - b. Prior to every starting.
 - c. Anytime the distillation unit has been inactive for more than 24 hours.
 - d. None of the above.
7. Under normal operating procedures the unit should be allowed a warmup period of:
- a. 15 to 30 seconds.
 - b. 30 to 60 seconds.
 - c. 1 to 3 minutes.
 - d. 3 to 5 minutes.
8. Under normal operating procedures the clutch should be engaged:
- a. Only after the tachometer exceeds 1200 revolutions per minute.
 - b. Slowly to allow compressor inertia loads to be overcome before positioning the clutch.
 - c. Only after the compressor lube oil pressure indicates 30 to 40 pounds per square inch.
 - d. None of the above.

9. A decrease in blowdown flow rate could be caused by:
- a. An inadequate feed water supply.
 - b. Buildup of scale particles.
 - c. Failure to open the evaporator drain plug once during each day of operation.
 - d. All of the above.
10. The engine overspeed governor should always be set:
- a. In accordance with your unit's standard operating procedure adjusted to the current ambient temperature.
 - b. At 1125 RPM.
 - c. Not to exceed 825 RPM trip setting.
 - d. None of the above.
11. After operation procedures require draining all water from the unit when:
- a. Freezing weather exists or is anticipated.
 - b. Monthly scheduled maintenance is due within 4 operating hours.
 - c. Only when the distillation unit is to be placed in extended storage (over 90 days).
 - d. The salt content in the feed water source exceeds 100 ppm (parts per million).
12. When engaged in descaling, proper safety procedures include:
- a. Pouring acid into water, not water into acid.
 - b. Avoiding the inhalation of acid fumes.
 - c. Wearing protective clothing when adding acid to the injector tank.
 - d. AH of the above.
13. The distillation unit's chemical injection system:
- a. Insures acid in excess of the quantity required to remove scale is metered into the unit.
 - b. Injects a metered quantity of chemical into the feed water to prevent scale from forming on the heat transfer surfaces.
 - c. Was removed when MWO (Modification Work Order) 03 was applied.
 - d. None of the above.
14. When descaling, you should maintain a:
- a. Maximum blowdown rate.
 - b. Normal blowdown rate.
 - c. Negative or reverse blowdown rate.
 - d. Minimum blowdown rate.

15. The following distillation unit items are lubricated every 24 hours:
- a. Crankcase, as required.
 - b. Compressor gear oil, as required.
 - c. All of the above.
 - d. None. The unit is a sealed self-lubricating unit.
16. The distillation unit, when provided a constant supply of feed water, can continuously produce:
- a. 200 gallons per hour of potable water.
 - b. 200 gallons per day of potable water.
 - c. 20 gallons per hour of potable water.
 - d. None of the above.
17. The control that makes continuous operation of the distillation unit possible, while cleaning a water strainer, is the:
- a. Feed water valve.
 - b. Fuel suction 3-way valve.
 - c. Distillate valve.
 - d. None of the above.
18. The chemical pump's purpose is to:
- a. Regulate the rate of flow of the distillate.
 - b. Pump chemical solution into the evaporator during descaling.
 - c. Lift feed water from the supply source.
 - d. None of the above.
19. The feed water pump has been designed to lift water up to:
- a. 3 feet above the feed water source.
 - b. 8 feet above the feed water source.
 - c. 13 feet above the feed water source.
 - d. 18 feet above the feed water source.
20. The primary purpose of the M-8 chemical injection system is to:
- a. Prevent corrosion in the blowdown float tank.
 - b. Prevent a buildup of scale particles in the feed water strainer.
 - c. Prevent scale from forming on the heat transfer surfaces.
 - d. All of the above.

21. What quantity per hour of chemical solution should the M-8 chemical injection system pump into the distillation unit?
- a. 5 cubic centimeters.
 - b. 15 cubic centimeters.
 - c. 25 cubic centimeters.
 - d. 35 cubic centimeters.
22. Descaling, when using sea water:
- a. Can maintain optimum operation, if accomplished after every 24 hours of operation.
 - b. Can normally be accomplished without shutting down the unit.
 - c. Must be accomplished whenever a steady decrease in distillate output is noted.
 - d. All of the above.
23. If you observed a distillation unit operating with the canvas side panels lowered and lashed to the housing pegs with rope, you would expect the unit was operating in:
- a. Cool or windy weather.
 - b. Cool or windy weather or in extremely cold conditions.
 - c. Extremely hot weather.
 - d. None of the above.
24. The fuel suction 3-way valve allows flow of fuel:
- a. From the 16 gallon fuel tank.
 - b. From the unit's auxiliary fuel tank to its main fuel tank.
 - c. From external fuel drums.
 - d. None of the above.
25. In conducting the descaling process, after flushing the acid injector with fresh water, you should:
- a. Reconnect the distillate line to the service tank.
 - b. Insure the acid flow valves are left open.
 - c. Insure the engine tachometer reads in excess of 1125 revolutions per minute for a minimum of 5 minutes.
 - d. Allow the unit to flush itself for 20 minutes before connecting the distillate line to the service tank.

Correct Responses - Distillation Unit, Water, Operator Test

- | | | | | | |
|----|---|-----|---|-----|---|
| 1. | c | 9. | d | 17. | a |
| 2. | c | 10. | b | 18. | b |
| 3. | d | 11. | a | 19. | b |
| 4. | e | 12. | d | 20. | c |
| 5. | b | 13. | b | 21. | c |
| 6. | a | 14. | a | 22. | d |
| 7. | d | 15. | c | 23. | b |
| 8. | b | 16. | a | 24. | c |
| | | | | 23. | d |
-

APPENDIX E
REPRESENTATIVE SKILL PERFORMANCE TESTS

(A listing of the representative skill performance tests appears in the Table of Contents, page vi.)

INSTRUCTIONS

The purpose of the skill performance test is to provide you an opportunity to demonstrate that you can effectively and safely operate the _____

Throughout the test, I will give you directions to accomplish certain tasks. The directions will be straightforward, and are not meant to lead or trick you into doing anything improper or unsafe. If you do not understand my directions, or feel that they are improper or will create unsafe conditions, discuss them with me as soon as you receive them.

During the test, I will ask questions for only two reasons; to gain an understanding as to why you have done something, or conversely, why you have not done something. My questions will not be asked to confuse or mislead you.

You will not be working under a rigid time limit. However, effective operations of this equipment requires prompt decisions and appropriate action.

If, after the test begins, I observe any of the following conditions, the test will be terminated.

- o Your safety is needlessly endangered.
- o Others safety is needlessly endangered.
- o The equipment is needlessly endangered.
- o Recklessness is apparent.
- o An accident occurs.
- o You cannot or do not follow my directions.

If the test is terminated, you will be told why and I will determine whether continuation or retesting is appropriate.

Do you have any questions before you begin your test?

SKILL PERFORMANCE TEST^{1/}
BATH UNIT, TRAILER-MOUNTED

NAME: _____ () Satisfactory () Unsatisfactory
ORGANIZATION: _____
DATE: _____ License Examiner: _____

TASK: Move to and select an outdoor, field operating site.
() Satisfactory () Unsatisfactory

TASK: Perform the operator's before operation services.
() Satisfactory () Unsatisfactory

TASK: Prepare the unit for starting.
() Satisfactory () Unsatisfactory

TASK: Start the engine.
() Satisfactory () Unsatisfactory

TASK: Make the necessary operating adjustments.
() Satisfactory () Unsatisfactory

TASK: Perform the operator's during operation services.

() Satisfactory () Unsatisfactory

TASK: Stop (shut down) the unit.

() Satisfactory () Unsatisfactory

TASK: Move the unit to the start point.

() Satisfactory () Unsatisfactory

TASK: Perform the operator's after operation services.

() Satisfactory () Unsatisfactory

1/ Not all tasks are mandatory. The Licensing Examiner will determine appropriate test tasks based on knowledge of the unit's mission, equipment/material availability, work site availability, and time constraints.

SKILL PERFORMANCE TEST ^u
BOAT, BRIDGE ERECTION

NAME: _____ () Satisfactory () Unsatisfactory
ORGANIZATION: _____
DATE: _____ License Examiner: _____

TASK: Conduct operator's daily before operation preventive maintenance services.
() Satisfactory () Unsatisfactory

TASK: Start the engine.
() Satisfactory () Unsatisfactory

TASK: Get under way ahead from a dock.
() Satisfactory () Unsatisfactory

TASK: Dock the boat.
() Satisfactory () Unsatisfactory

TASK: Get under way astern from a dock.
() Satisfactory () Unsatisfactory

TASK: Get under way after being adrift.

() Satisfactory () Unsatisfactory

TASK: Push a raft or floating object.

() Satisfactory () Unsatisfactory

TASK: Conduct operator's daily during operation preventive maintenance services.

() Satisfactory () Unsatisfactory

TASK: Dock a raft or floating object.

() Satisfactory () Unsatisfactory

TASK: Stop the engines.

() Satisfactory () Unsatisfactory

TASK: Conduct the operator's daily after operation preventive maintenance services.

() Satisfactory () Unsatisfactory

1_/ Not all tasks are mandatory. The Licensing Examiner will determine appropriate test tasks based on knowledge of the unit's mission, equipment/material availability, work site availability, and time constraints.

SKILL PERFORMANCE TEST $\frac{1}{-}$
COMPRESSOR, AIR ROTARY, 250 CFM

NAME: _____ () Satisfactory () Unsatisfactory
ORGANIZATION: _____
DATE: _____ License Examiner: _____

TASK: Perform the operator's before operation services.
() Satisfactory () Unsatisfactory

TASK: Move the compressor to a designated work site.
() Satisfactory () Unsatisfactory

TASK: Start the compressor.
() Satisfactory () Unsatisfactory

TASK: Provide compressed air to external devices.
() Satisfactory () Unsatisfactory

TASK: Perform the operator's during operation services.
() Satisfactory () Unsatisfactory

TASK: Shut-down the compressor.

() Satisfactory () Unsatisfactory

TASK: Prepare the compressor for movement to the start point.

() Satisfactory () Unsatisfactory

TASK: Perform the operator's after operation services.

() Satisfactory () Unsatisfactory

1/ Not all tasks are mandatory. The Licensing Examiner will determine appropriate test tasks based on knowledge of the unit's mission, equipment/material availability, work site availability, and time constraints.

SKILL PERFORMANCE TEST ⁴
CRANE, ROUGH TERRAIN, HYDRAULIC, 30 TON

NAME: _____ () Satisfactory () Unsatisfactory

ORGANIZATION: _____

DATE: _____ License Examiner: _____

TASK: Conduct the operator's before operation daily services.

() Satisfactory () Unsatisfactory

TASK: Start the engine.

() Satisfactory () Unsatisfactory

TASK: Move the crane to the work site.

Preparation for movement () Satisfactory () Unsatisfactory

Driving () Satisfactory () Unsatisfactory

Steering () Satisfactory () Unsatisfactory

TASK: Emplace the outriggers.

() Satisfactory () Unsatisfactory

TASK: Operate the boom.

() Satisfactory () Unsatisfactory

TASK: Conduct a hoist and swing operation.

Hoist () Satisfactory () Unsatisfactory

Swing () Satisfactory () Unsatisfactory

TASK: Conduct a winching operation.

() Satisfactory () Unsatisfactory

TASK: Travel with the pile driver (Provide a signalman).

() Satisfactory () Unsatisfactory

TASK: Conduct a clamshell operation.

() Satisfactory () Unsatisfactory

TASK: Conduct the operator's during operation daily services.

() Satisfactory () Unsatisfactory

TASK: Move the crane to the start point.

Preparation for movement () Satisfactory () Unsatisfactory

Driving () Satisfactory () Unsatisfactory

Steering () Satisfactory () Unsatisfactory

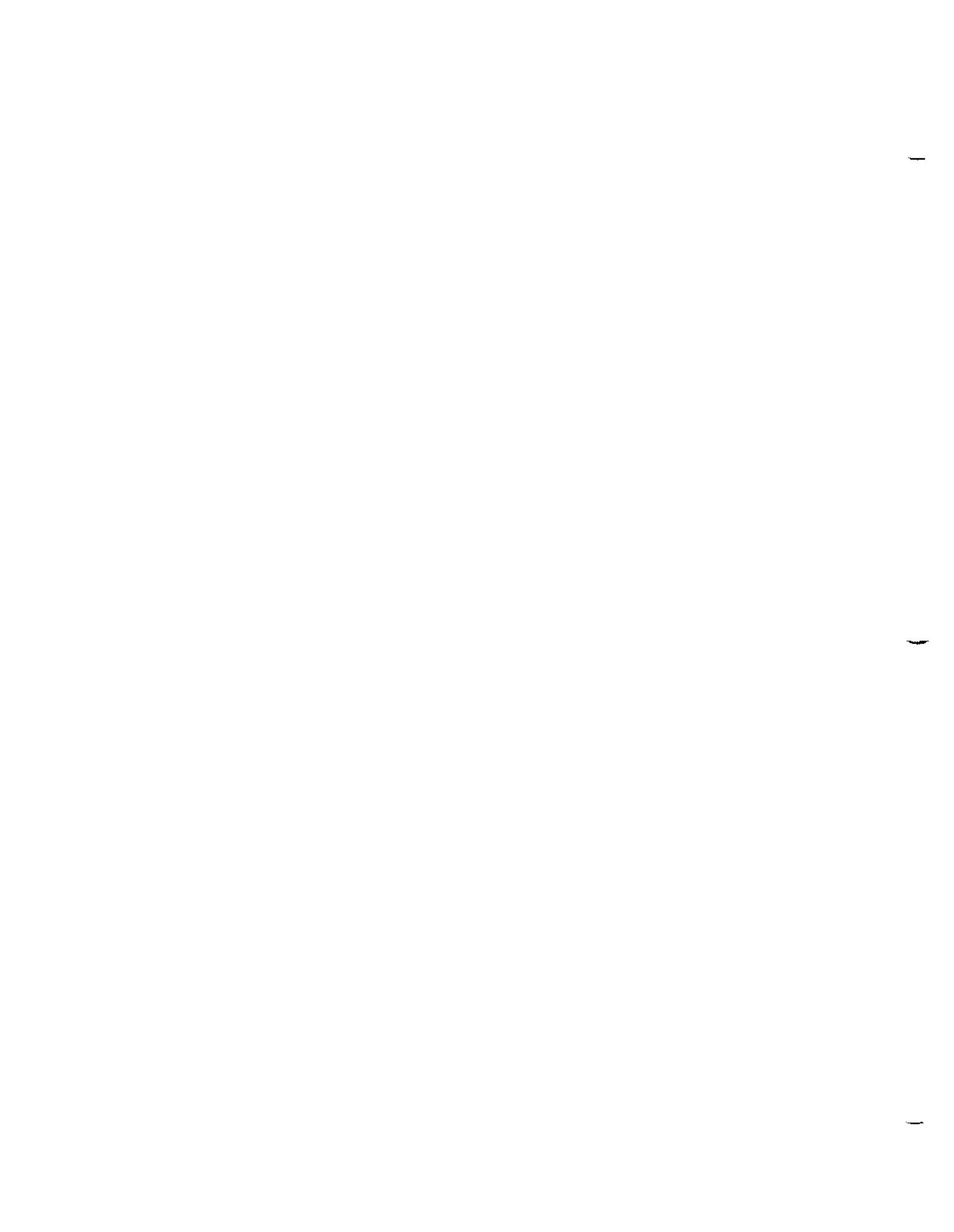
TASK: Shut the engine down.

() Satisfactory () Unsatisfactory

TASK: Conduct the operator's after operation daily services.

() Satisfactory () Unsatisfactory

1/ Not all tasks are mandatory. The Licensing Examiner will determine appropriate test tasks based on knowledge of the unit's mission, equipment/material availability, work site availability, and time constraints.



SKILL PERFORMANCE TEST ^u
CRANE, WHEEL-MOUNTED, SELF-PROPELLED, 7 1/2 TON

NAME: _____ () Satisfactory () Unsatisfactory
ORGANIZATION: _____
DATE: _____ License Examiner: _____

TASK: Conduct the operator's before operation daily services.
() Satisfactory () Unsatisfactory

TASK: Start the engine.
() Satisfactory () Unsatisfactory

TASK: Drive the crane to a work site.

Superstructure conditions	() Satisfactory	() Unsatisfactory
Steering	() Satisfactory	() Unsatisfactory
Travel	() Satisfactory	() Unsatisfactory

TASK: Conduct preload checks.
() Satisfactory () Unsatisfactory

TASK: Position the outriggers.
() Satisfactory () Unsatisfactory

TASK: Swing, raise, lower and telescope the boom.

() Satisfactory () Unsatisfactory

TASK: Lower and raise the cable.

() Satisfactory () Unsatisfactory

TASK: Conduct a lifting operation.

() Satisfactory () Unsatisfactory

TASK: Conduct the operator's during operation daily services.

() Satisfactory () Unsatisfactory

TASK: Return the crane to the start point.

Superstructure conditions () Satisfactory () Unsatisfactory

Steering () Satisfactory () Unsatisfactory

Travel () Satisfactory () Unsatisfactory

TASK: Conduct the operator's after operation daily services.

() Satisfactory () Unsatisfactory

1/ Not all tasks are mandatory. The Licensing Examiner will determine appropriate test tasks based on knowledge of the unit's mission, equipment/material availability, work site availability, and time constraints.

SKILL PERFORMANCE TEST1/
DECONTAMINATING APPARATUS

NAME: _____ () Satisfactory () Unsatisfactory
ORGANIZATION: _____
DATE: _____ License Examiner: _____

TASK: Perform the operator's before operation services.
() Satisfactory () Unsatisfactory

TASK: Move the unit to a designated decontaminating site.
() Satisfactory () Unsatisfactory

TASK: Start the pump unit assembly.
() Satisfactory () Unsatisfactory

TASK: Load the tank unit assembly with water from a natural source.
() Satisfactory () Unsatisfactory

TASK: Connect the M2 water heater.
() Satisfactory () Unsatisfactory

TASK: Load the tank with STB Decontaminating Agent.

Satisfactory Unsatisfactory

Satisfactory Unsatisfactory

TASK: Shut down the unit.

Satisfactory Unsatisfactory

TASK: Perform the operator's after operation services.

Satisfactory Unsatisfactory

TASK: Clean and store the decontaminating apparatus.

Satisfactory Unsatisfactory

TASK: Return the unit to the start point.

()'satisfactory () Unsatisfactory

1/ Not all tasks are mandatory. The Licensing Examiner will determine appropriate test tasks based on knowledge of the unit's mission, equipment/material availability, work site availability, and time constraints.

SKILL PERFORMANCE TEST 1/
GENERATOR SET, 30 KW 60 HZ

NAME: _____ () Satisfactory () Unsatisfactory
ORGANIZATION: _____
DATE: _____ License Examiner: _____

TASK: Perform the operator's before operation (prestart) services.
() Satisfactory () Unsatisfactory

TASK: Connect the power connections.
() Satisfactory () Unsatisfactory

TASK: Start the generator set (local panel starting).
() Satisfactory () Unsatisfactory

TASK: Conduct the operator's during operation services.
() Satisfactory () Unsatisfactory

TASK: Shutdown the generator set.
() Satisfactory () Unsatisfactory

TASK: Set up a second generator set for parallel unit operation.

With cable Satisfactory Unsatisfactory

Without cable Satisfactory Unsatisfactory

TASK: Remove generator set from parallel operation.

Satisfactory Unsatisfactory

TASK: Conduct the operator's after operation services.

Satisfactory Unsatisfactory

TASK: Explain how the generator set's protective devices would be bypassed for emergency operations.

Satisfactory Unsatisfactory

1/ Not all tasks are mandatory. The Licensing Examiner will determine appropriate test tasks based on knowledge of the unit's mission, equipment/material availability, work site availability, and time constraints.

SKILL PERFORMANCE TEST 1/
GENERATOR SET, 100 KW, 60 HZ

NAME: _____ () Satisfactory () Unsatisfactory

ORGANIZATION: _____

DATE: _____ License Examiner: _____

TASK: Perform the operator's before operation (prestart) services.

() Satisfactory () Unsatisfactory

TASK: Prepare an outdoors, temporary installation, single unit operation.

() Satisfactory () Unsatisfactory

TASK: Start the generator.

() Satisfactory () Unsatisfactory

TASK: Operate the generator.

() Satisfactory () Unsatisfactory

TASK: Stop the generator.

() Satisfactory () Unsatisfactory

TASK: Prepare two generators for parallel operation.

() Satisfactory () Unsatisfactory

TASK: Start the generators.

() Satisfactory () Unsatisfactory

TASK: Operate the generators in parallel.

() Satisfactory () Unsatisfactory

TASK: Conduct during operation checks.

() Satisfactory () Unsatisfactory

TASK: Stop the generators.

() Satisfactory () Unsatisfactory

TASK: Conduct the operator's after operation services.

() Satisfactory () Unsatisfactory

1/ Not all tasks are mandatory. The Licensing Examiner will determine appropriate test tasks based on knowledge of the unit's mission, equipment/material availability, work site availability, and time constraints.

SKILL PERFORMANCE TEST 1/
SAW, CHAIN, ONE-MAN PORTABLE

NAME: _____ () Satisfactory () Unsatisfactory

ORGANIZATION: _____

DATE: _____ License Examiner: _____

TASK: Premix fuel.

() Satisfactory () Unsatisfactory

TASK: Start the saw.

() Satisfactory () Unsatisfactory

TASK: Warm up the saw.

() Satisfactory () Unsatisfactory

TASK: Fell a tree.

() Satisfactory () Unsatisfactory

TASK: Prune the smaller limbs off the felled tree.

() Satisfactory () Unsatisfactory

TASK: Buck the felled tree.

Satisfactory Unsatisfactory

TASK: Stop the saw.

Satisfactory Unsatisfactory

TASK: Prepare the chain saw for extended storage (several months).

Satisfactory Unsatisfactory

1/ Not all tasks are mandatory. The Licensing Examiner will determine appropriate test tasks based on knowledge of the unit's mission, equipment/material availability, work site availability, and time constraints.

SKILL PERFORMANCE TEST ⁴
SAWS, RADIAL OVERARM

NAME: _____ () Satisfactory () Unsatisfactory

ORGANIZATION: _____

DATE: _____ License Examiner: _____

TASK: Conduct the operator's before operation services.

() Satisfactory () Unsatisfactory

TASK: Move to and select an outdoor operating site.

() Satisfactory () Unsatisfactory

TASK: Set up sawing machine for wood operations.

Positioning and leveling () Satisfactory () Unsatisfactory

Setting up saw and accessories () Satisfactory () Unsatisfactory

TASK: Start the engine-generator and adjust output voltage.

Starting () Satisfactory () Unsatisfactory

Voltage Regulation () Satisfactory () Unsatisfactory

TASK: Start the saw motors.

() Satisfactory () Unsatisfactory

TASK: Conduct cross-cutting operation.

() Satisfactory () Unsatisfactory

TASK: Conduct ripping operation.

() Satisfactory () Unsatisfactory

TASK: Conduct bevel cutting operation.

() Satisfactory () Unsatisfactory

TASK: Conduct electric portable saw operation.

Crosscut () Satisfactory () Unsatisfactory

Bevel cut () Satisfactory () Unsatisfactory

Ripping cut () Satisfactory () Unsatisfactory

TASK: Conduct during operation services.

() Satisfactory () Unsatisfactory

TASK: Shut down the unit and relocate to start point.

() Satisfactory () Unsatisfactory

TASK: Conduct after operation services.

() Satisfactory () Unsatisfactory

1/ Not all tasks are mandatory. The Licensing Examiner will determine appropriate test tasks based on knowledge of the unit's mission, equipment/material availability, work site availability, and time constraints.

SKILL PERFORMANCE TEST $\frac{1}{-}$
SCRAPER, EARTHMOVING, TOWED

NAME: _____ () Satisfactory () Unsatisfactory
ORGANIZATION: _____
DATE: _____ License Examiner: _____

TASK: Conduct the operator's before operation services.

Daily services	() Satisfactory	() Unsatisfactory
Lubrication	() Satisfactory	() Unsatisfactory
Preventive maintenance	() Satisfactory	() Unsatisfactory

TASK: Connect scraper to tractor.

() Satisfactory () Unsatisfactory

TASK: Connect traction aid (wheel-type tractor).

() Satisfactory () Unsatisfactory

TASK: Connect hoses.

Hydraulic	() Satisfactory	() Unsatisfactory
Air brake	() Satisfactory	() Unsatisfactory

TASK: Controls check before operation.

() Satisfactory () Unsatisfactory

TASK: Operate the scraper.

- | | | |
|----------------------|---------------------------------------|---|
| Scraping and loading | <input type="checkbox"/> Satisfactory | <input type="checkbox"/> Unsatisfactory |
| Spreading | <input type="checkbox"/> Satisfactory | <input type="checkbox"/> Unsatisfactory |
| Dumping | <input type="checkbox"/> Satisfactory | <input type="checkbox"/> Unsatisfactory |
| Scraping | <input type="checkbox"/> Satisfactory | <input type="checkbox"/> Unsatisfactory |
-
-

TASK: Perform the operator's during operation services.

- Satisfactory Unsatisfactory
-
-

TASK: Disconnect the scraper from the tractor.

- Satisfactory Unsatisfactory
-
-

TASK: Perform the operator's after operation services.

- Satisfactory Unsatisfactory
-
-

1/ Not all tasks are mandatory. The Licensing Examiner will determine appropriate test tasks based on knowledge of the unit's mission, equipment/material availability, work site availability, and time constraints,

SKILL PERFORMANCE TEST ^u
TRACTOR, MEDIUM, FULL-TRACKED
TEREX 82-30M

NAME: _____ () Satisfactory () Unsatisfactory

ORGANIZATION: _____

DATE: _____ License Examiner: _____

TASK: Conduct the operator's before operation services.
() Satisfactory () Unsatisfactory

TASK: Start the tractor's engine.
() Satisfactory () Unsatisfactory

TASK: Conduct a post-starting inspection.
() Satisfactory () Unsatisfactory

TASK: Move the tractor to a designated work site.
() Satisfactory () Unsatisfactory

TASK: Conduct a dozing operation.

Lower the blade	() Satisfactory	() Unsatisfactory
Tilt the blade	() Satisfactory	() Unsatisfactory
Raise the blade	() Satisfactory	() Unsatisfactory

TASK: Conduct the operator's during operation services.
() Satisfactory () Unsatisfactory

TASK: Conduct a ripping operation.
Lower the ripper assembly () Satisfactory () Unsatisfactory
Raise the ripper assembly () Satisfactory () Unsatisfactory

TASK: Conduct a winching operation.
Pay out the cable () Satisfactory () Unsatisfactory
Winch in the cable () Satisfactory () Unsatisfactory

TASK: Return the tractor to the start point.
() Satisfactory () Unsatisfactory

TASK: Conduct the operator's after operation services.
() Satisfactory () Unsatisfactory

1/ Not all tasks are mandatory. The Licensing Examiner will determine appropriate test tasks based on knowledge of the unit's mission, equipment/material availability, work site availability, and time constraints.

SKILL PERFORMANCE TEST ^{1/}
TRACTOR, FULL-TRACKED WITH MULTIPURPOSE BUCKET

NAME: _____ () Satisfactory () Unsatisfactory
ORGANIZATION: _____
DATE: _____ License Examiner: _____

TASK: Conduct the operator's before operation services.
() Satisfactory () Unsatisfactory

TASK: Start the engine and warm up the tractor.
() Satisfactory () Unsatisfactory

TASK: Move the tractor to a designated work site.

Low-/high-speed selection	() Satisfactory	() Unsatisfactory
Steering	() Satisfactory	() Unsatisfactory
Stopping	() Satisfactory	() Unsatisfactory

TASK: Operate the multipurpose bucket.

Dozing	() Satisfactory	() Unsatisfactory
Scraping	() Satisfactory	() Unsatisfactory
Spreading	() Satisfactory	() Unsatisfactory
Clamshell Work	() Satisfactory	() Unsatisfactory
Bucket Loading	() Satisfactory	() Unsatisfactory
Transporting a Load	() Satisfactory	() Unsatisfactory
Dumping	() Satisfactory	() Unsatisfactory

TASK: Perform a winching operation.

Satisfactory Unsatisfactory

TASK: Perform the operator's during operation services.

Satisfactory Unsatisfactory

TASK: Return the tractor to the start point.

Satisfactory Unsatisfactory

TASK: Perform the operator's after operation services.

Satisfactory Unsatisfactory

1/ Not all tasks are mandatory. The Licensing Examiner will determine appropriate test tasks based on knowledge of the unit's mission, equipment/material availability, work site availability, and time constraints.

SKILL PERFORMANCE TEST ^u
TRUCK, FORKLIFT, ROUGH TERRAIN, MC4000

NAME: _____ () Satisfactory () Unsatisfactory
ORGANIZATION: _____
DATE: _____ License Examiner: _____

TASK: Conduct the operator's before operation services.
() Satisfactory () Unsatisfactory

TASK: Start the engine.
() Satisfactory () Unsatisfactory

TASK: Move the forklift truck to a designated work site.

Speed	() Satisfactory	() Unsatisfactory
Tire pressure	() Satisfactory	() Unsatisfactory
Steering	() Satisfactory	() Unsatisfactory

TASK: Stop the forklift truck.
() Satisfactory () Unsatisfactory

TASK: Adjust (narrow/widen) the forks.
() Satisfactory () Unsatisfactory

TASK: Forklift operation.

- | | | |
|---------------------|---------------------------------------|---|
| Picking up a load | <input type="checkbox"/> Satisfactory | <input type="checkbox"/> Unsatisfactory |
| Tilting a load | <input type="checkbox"/> Satisfactory | <input type="checkbox"/> Unsatisfactory |
| Transporting a load | <input type="checkbox"/> Satisfactory | <input type="checkbox"/> Unsatisfactory |
| Depositing a load | <input type="checkbox"/> Satisfactory | <input type="checkbox"/> Unsatisfactory |
-
-

TASK: Perform the operator's during operation services.

- Satisfactory Unsatisfactory
-
-

TASK: Return the forklift truck to the start point.

- Satisfactory Unsatisfactory
-
-

TASK: Stop the forklift truck.

- Satisfactory Unsatisfactory
-
-

TASK: Perform the operator's after operation services.

- Satisfactory Unsatisfactory
-
-

1/ Not all tasks are mandatory. The Licensing Examiner will determine appropriate test tasks based on knowledge of the unit's mission, equipment/material availability, work site availability, and time constraints.

SKILL PERFORMANCE TEST ⁴
WATER PURIFICATION UNIT, FRAME-MOUNTED

NAME: _____ () Satisfactory () Unsatisfactory
ORGANIZATION: _____
DATE: _____ License Examiner: _____

TASK: Perform the operator's before operation services.
() Satisfactory () Unsatisfactory

TASK: Move to and select a field operation work site.
() Satisfactory () Unsatisfactory

TASK: Prepare the unit for operations.

Ferric chloride solution	() Satisfactory	() Unsatisfactory
Calcium hypochlorite solution	() Satisfactory	() Unsatisfactory
Chemical solution feeder tanks	() Satisfactory	() Unsatisfactory
Limestone slurry	() Satisfactory	() Unsatisfactory
Diatomaceous earth slurry feeder	() Satisfactory	() Unsatisfactory
Diatomaceous earth for precoating	() Satisfactory	() Unsatisfactory
Activated carbon	() Satisfactory	() Unsatisfactory
Chlorine residual test comparator	() Satisfactory	() Unsatisfactory

TASK: Start the water treatment section.
() Satisfactory () Unsatisfactory

TASK: Start the diatomite filter.

() Satisfactory () Unsatisfactory

TASK: Make the necessary adjustments based on quantity and quality of the raw water being pumped.

() Satisfactory () Unsatisfactory

TASK: Perform the operator's during operation services.

() Satisfactory () Unsatisfactory

TASK: Stop the filter run and conduct a backwash and filter bottom wash operation.

() Satisfactory () Unsatisfactory

TASK: Use an electrical or gasoline driven distribution pump.

() Satisfactory () Unsatisfactory

TASK: Shutdown the water treatment section.

() Satisfactory () Unsatisfactory

TASK: Perform the operator's after operation services.

Satisfactory Unsatisfactory

TASK: Return the unit to the start point.

Satisfactory Unsatisfactory

1/ Not all tasks are mandatory. The Licensing Examiner will determine appropriate test tasks based on knowledge of the unit's mission, equipment/material availability, work site availability, and time constraints.

SKILL PERFORMANCE TEST ¼
DISTILLATION UNIT, WATER

NAME: _____ () Satisfactory () Unsatisfactory
ORGANIZATION: _____
DATE: _____ License Examiner: _____

TASK: Move the unit to and select an outside location for operation.
() Satisfactory () Unsatisfactory

TASK: Perform the operator's before operation services.
() Satisfactory () Unsatisfactory

TASK: Prepare the unit for outside operations.

Leveling	() Satisfactory	() Unsatisfactory
Connections	() Satisfactory	() Unsatisfactory
Priming	() Satisfactory	() Unsatisfactory

TASK: Start the distillation unit.
() Satisfactory () Unsatisfactory

TASK: Perform the operator's during operation services.
() Satisfactory () Unsatisfactory

TASK: Descale the distillation unit.

Satisfactory Unsatisfactory

TASK: Stop the unit,

Satisfactory Unsatisfactory

TASK: Return the unit to the start point.

Satisfactory Unsatisfactory

TASK: Perform the operator's after operation services.

Satisfactory Unsatisfactory

1/ Not all tasks are mandatory. The Licensing Examiner will determine appropriate test tasks based on knowledge of the unit's mission, equipment/material availability, work site availability, and time constraints.

