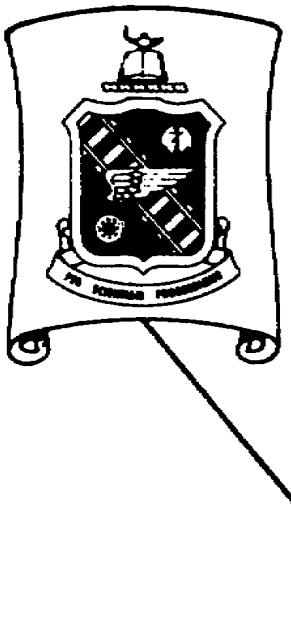


CORRESPONDENCE COURSE OF THE
U. S. ARMY
TRANSPORTATION SCHOOL

RAIL OPERATIONS PLANNING

EDITION 3
15 CREDIT HOURS

LESSON EXERCISES
TRANS SUBCOURSE 603

Fort Eustis, Virginia

Supersedes Trans 603, Rail Operations Planning, August 1970.

*****IMPORTANT NOTICE*****

THE PASSING SCORE FOR ALL ACCP MATERIAL IS NOW 70%

PLEASE DISREGARD ALL REFERENCES TO THE 75% REQUIREMENT.

TRANS SUBCOURSE 603

RAIL OPERATIONS PLANNING

INTRODUCTION

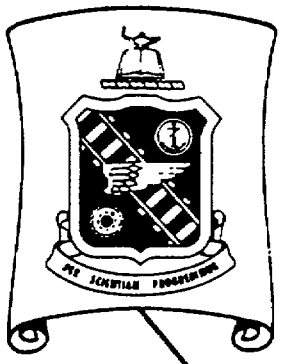
Two world wars, the Korean war, and the Vietnam conflict have brought into sharp focus the tremendous demands of global warfare on transportation of all kinds. Despite lack of time, adverse weather, and enemy opposition, the Army must always have adequate transportation immediately available for use anywhere in the world. Not only is it necessary to move men and equipment to danger spots wherever they may be located, but it is also necessary to keep them constantly supplied with all the stores and equipment the situation requires. The planning for such operations is a tremendous task.

When it becomes desirable to use a railroad located in a theater of operations, planning is especially difficult. The condition of the railroad and the capability of its equipment may be unknown; without constant maintenance, weather alone can cause rapid deterioration. Add war-inflicted damage and it is clear that the job of reestablishing operations will not be easy. Enemy bombers and saboteurs can further complicate matters. A single-track railroad through rugged territory or through an area where the people are hostile to U. S. forces can prove particularly difficult to operate and maintain. Nevertheless, a plan must be made for the operation.

It may be your job to appraise a rail line and to plan for its use. After studying the reference text to this subcourse, you are expected to be able to explain how and where intelligence data are obtained on a railroad network and to determine the capacity of the rail line, how Much of what kind of equipment is needed, the number and kind of operating personnel required, and the amount and kind of supplies needed to support the rail operation.

The subcourse consists of four lessons and an examination as follows:

		Credit hours
Lesson 1,	Tonnage Capacity Determination	2
2,	Tonnage Capacity Determination (continued)	4
3,	Equipment and Personnel Requirements	3
4,	Supply Requirements	2
Examination		4
	Total	15



CORRESPONDENCE COURSE OF THE U. S. ARMY TRANSPORTATION SCHOOL

RAIL OPERATIONS, THEATER

LESSON BOOKLET TRANS SUBCOURSE 640

March 1976

Supersedes Trans 640, Rail Operations, Theater, June 1973.

TO BE USED WITH REFERENCE TEXT 640, JUNE 1973.

TRANS SUBCOURSE 640

RAIL OPERATIONS, THEATER

INTRODUCTION

Railroads have successfully provided logistic support to our armed forces in the two World Wars and the Korean War and in Vietnam. Providing rail transportation in a theater of operations is no simple or easy job, and the success of the transportation railway service (TRS) mission is dependent upon the abilities and understanding of TRS officers and enlisted men. Those who performed the railroading jobs in the theaters mentioned were men trained on civilian railroads as well as those who learned their railroading while in the service.

The basic principles of railroading are almost the same anywhere in the world although special problems are encountered in foreign countries during wartime that are not met in commercial railroading during peacetime. A bridge is blown up, a tunnel is sabotaged, tracks are torn up, culverts are destroyed; the enemy's bombing, artillery fire, and destructive actions interrupt train movements and cause congestion in terminals and yards. Every field expedient as well as a high degree of ingenuity must be used to reopen rail lines as quickly as possible and keep trains running in spite of repeated attacks and extensive destruction. The mass evacuation of large groups of refugees from a combat area, quick lateral movements of troop units with their equipment, and the transportation of sensitive missile components and other critical items present still other problems to the commanders of rail units.

This is a one-lesson subcourse, including lesson exercises, lesson solutions, and an examination. Two credit hours are allowed for the entire subcourse. The exercises are to be completed under the concept of self-paced instruction. You will grade them yourself, using the lesson solutions attached to the examination.

Follow these steps in completing the subcourse.

(1) Study the text material assigned for the lesson.

(2) After thorough study, answer each question by marking or circling your solutions in the lesson book.

REFERENCE TEXT 640

RAIL OPERATIONS, THEATER

The information contained herein is provided for instructional purposes only. It reflects the current thought of this school and conforms to printed Department of the Army doctrine as closely as possible. Development and progress render such doctrine continuously subject to change.

U. S. ARMY TRANSPORTATION SCHOOL

Supersedes Reference Text 640, Rail Operations, Theater, March 1970.

NOTICE TO STUDENT

Trans Subcourse 640

16 March 1976

CORRESPONDENCE COURSE
OF
U. S. ARMY TRANSPORTATION SCHOOL

IMPORTANT

Supplement No. 1 to Reference Text 640, Rail Operations. Theater, June 1973, is published to make you aware of the field army reorganization that is taking place. DO NOT base your answers to the questions in the lesson exercises or examination on the information in the supplement. Answer all questions based on the material in the reference text.

REFERENCE TEXT
640

SUPPLEMENT NO. 1

16 March 1976

U. S. ARMY TRANSPORTATION SCHOOL

Supplement to REFERENCE TEXT 640, RAIL OPERATIONS, THEATER, June 1973

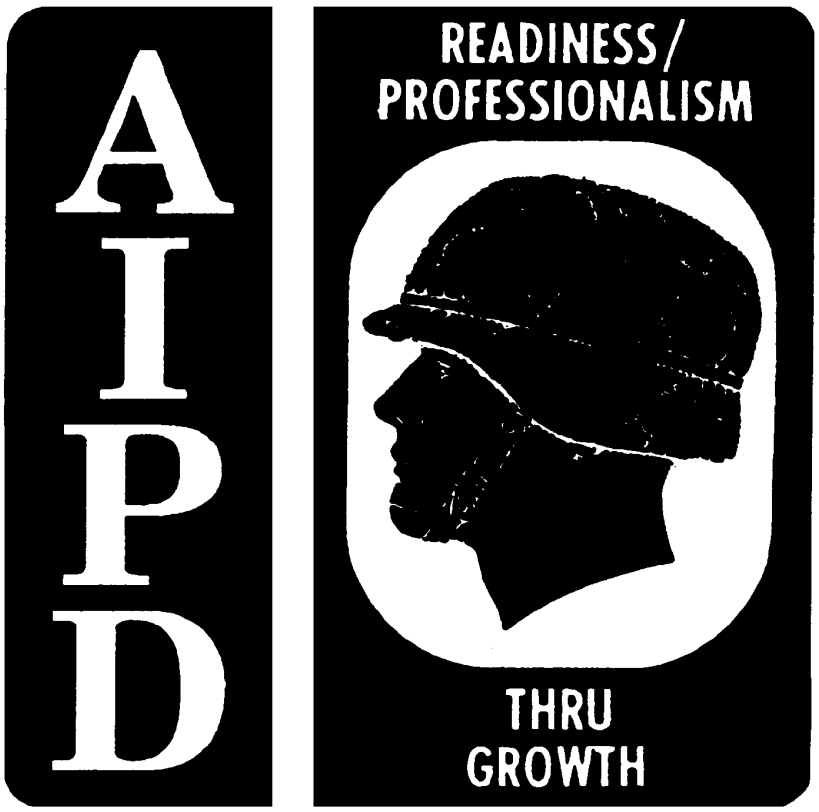
The theater Army organization is being revised under the Echelons Above Division (EAD) study. The EAD eliminates the field army support command (FASCOM) and its subordinate support brigades and replaces them with a newly formed corps support command (COSCOM). The study concentrates on merging the theater army support command (TASCOM) headquarters with the theater army (TA) headquarters; eliminating the materiel command (MATCOM), with its field depots and COMMZ depot distribution system; establishing the COSCOM in the combat zone and the theater army area command (TAACOM) in the COMMZ as the highest organizational levels of supply and maintenance support in the theater; and incorporating supply concepts relying more heavily on CONUS theater oriented depots for direct supply as close to the using unit as possible.

Department of the Army doctrine covering the new concept has not been published. When the doctrine is published this text will be revised to reflect the new concept.

SUBCOURSE
TRO640

EDITION
7

RAIL OPERATIONS, THEATER

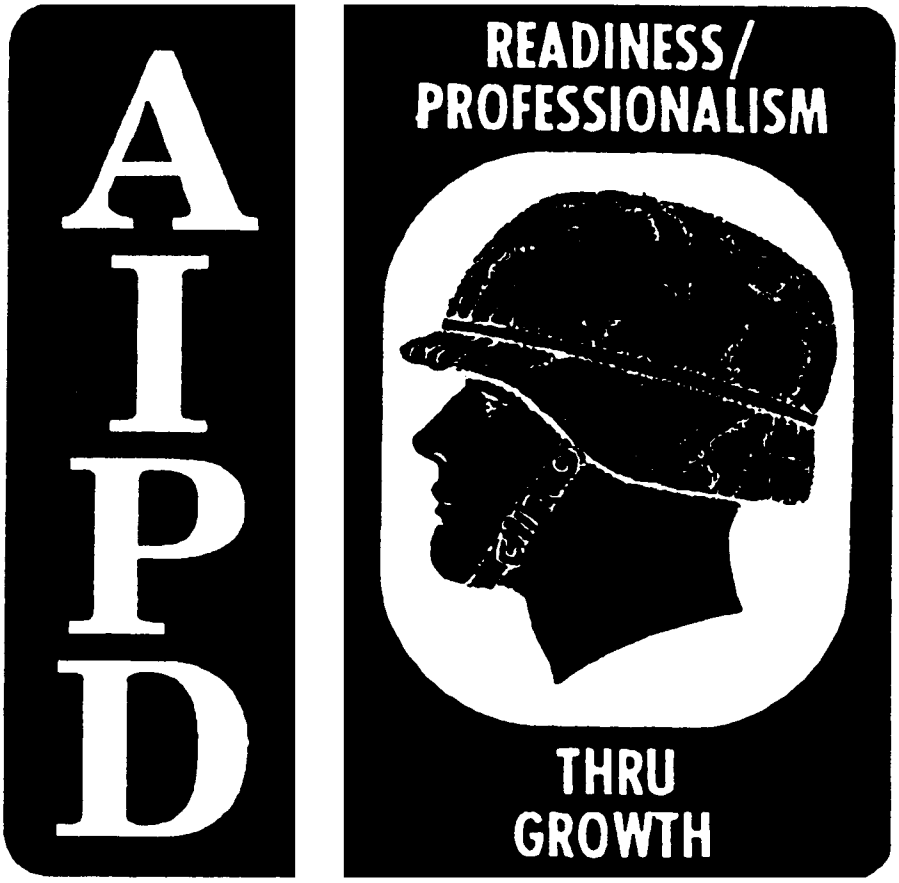


THE ARMY INSTITUTE FOR PROFESSIONAL DEVELOPMENT

ARMY CORRESPONDENCE COURSE PROGRAM

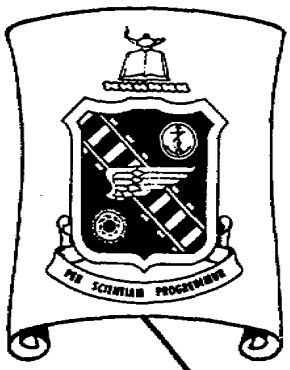
SUBCOURSE	EDITION
TRO655	4

RAILWAY ROLLING STOCK



THE ARMY INSTITUTE FOR PROFESSIONAL DEVELOPMENT

ARMY CORRESPONDENCE COURSE PROGRAM



CORRESPONDENCE COURSE OF THE
U. S. ARMY
TRANSPORTATION SCHOOL

RAILWAY ROLLING STOCK

LESSON EXERCISES
TRANS SUBCOURSE 655

Fort Eustis, Virginia

Supersedes Trans 655, Railway Rolling Stock, August 1969.

***** IMPORTANT NOTICE *****

THE PASSING SCORE FOR ALL ACCP MATERIAL IS NOW 70%.

PLEASE DISREGARD ALL REFERENCES TO THE 75% REQUIREMENT.

TRANS SUBCOURSE 655

RAILWAY ROLLING STOCK

INTRODUCTION

Operations in World War II and the Korean War have clearly demonstrated the value of railroads in moving supplies and troops over land with an economy of fuel and manpower. In any future conflict, it can be safely guessed that railway rolling stock would again carry a large number of troops, moving in organized groups, and a large tonnage of military freight.

You, as a member of the United States Army, may one day be serving in a rail unit. Whatever your assignment, whether it be in operations or maintenance, you should know your equipment--what it consists of, how it is constructed, and how it functions. Only by being thoroughly familiar with the major components of a piece of rolling stock can you be able to recognize promptly any malfunction and report it for correction.

This subcourse is intended to familiarize you with the types of rolling stock, distinguishable by their superstructures, and with their major components. It consists of six lessons and an examination, divided as follows:

		Credit hours
Lesson	1, Types of Rolling Stock	1
	2, Wheels and Axles	3
	3, Trucks	1
	4, Underframe, Draft Gear, and Couplers	2
	5, Brakes	1
	6, Safety Appliances	1
Examination		2
	Total	11

You are not limited as to the number of hours you may spend on the solutions of the lessons or the examination. For statistical purposes you are requested to enter on the answer sheet the number of hours spent on the solutions.

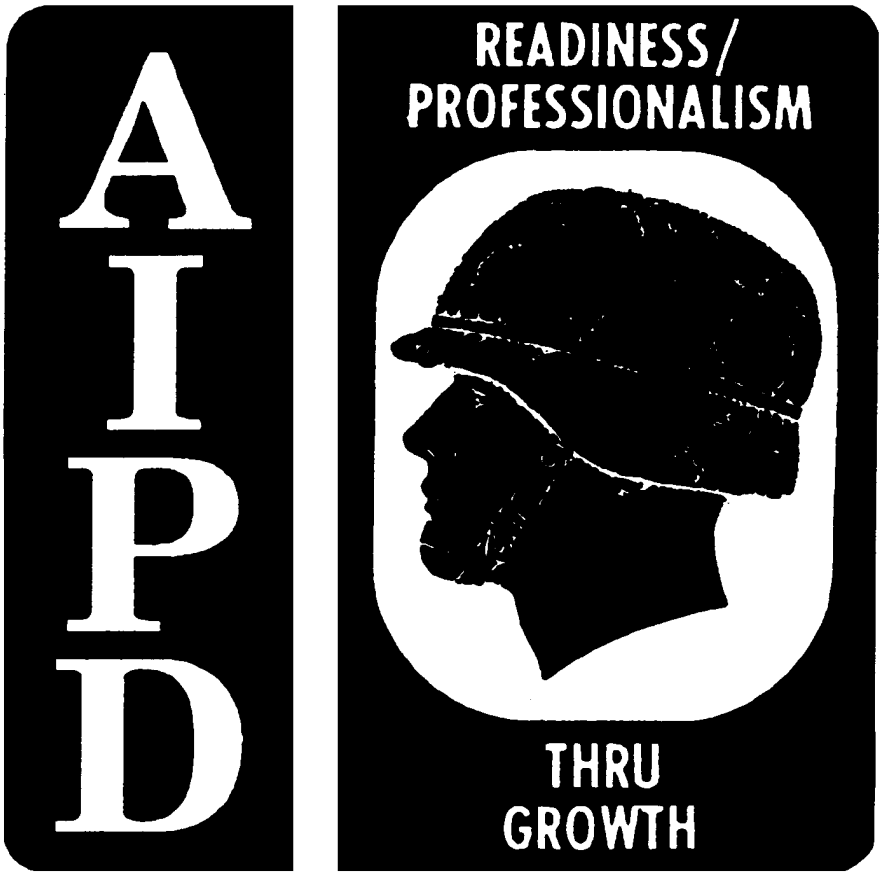
Text and materials furnished: Reference Text 655, Railway Rolling Stock, April 1974.

Upon completion of this subcourse, retain the reference text and exercise sheets. Do not return them with your answer sheet.

SUBCOURSE
TM0656

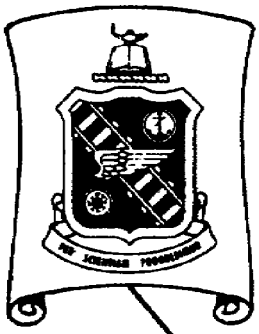
EDITION
4

DIESEL-ELECTRIC LOCOMOTIVES



THE ARMY INSTITUTE FOR PROFESSIONAL DEVELOPMENT

ARMY CORRESPONDENCE COURSE PROGRAM



CORRESPONDENCE COURSE OF THE
U. S. ARMY
TRANSPORTATION SCHOOL

DIESEL-ELECTRIC LOCOMOTIVES

LESSON EXERCISES
TRANS SUBCOURSE 656

Supersedes Trans 656, Diesel-Electric Locomotives, November 1969.

TRANS SUBCOURSE 656

DIESEL-ELECTRIC LOCOMOTIVES

INTRODUCTION

An understanding of the structure of a locomotive mechanically and electrically is essential to a person attempting to perform maintenance and repair services on it. The reference text on which this subcourse is based is a broad presentation of locomotive structure and a basic outline of maintenance and repair procedures. Upon completion of the subcourse, you should be able to identify the mechanical parts of a diesel-electric locomotive, to explain how the components of the electric system work, to describe maintenance procedures required to keep the locomotive running properly, and to troubleshoot for various malfunctions. The subcourse consists of four lessons and an examination, divided as follows:

	Credit hours
Lesson 1, Mechanical Structure	1
2, Electric System	2
3, Mechanical Maintenance and Repair	1
4, Electrical Maintenance and Repair; Troubleshooting	2
Examination	2
Total	8

You are not limited as to the number of hours you may spend on the solution of the lessons or the examination. For statistical purposes, you are requested to enter on the answer sheet the number of hours spent on each set of solutions.

Text and materials furnished: Reference Text 656, Diesel-Electric Locomotives, June

Upon completion of this subcourse, retain the reference text and exercise sheets. Do not return them with your answer sheet.

LESSON 1..... Mechanical Structure.

CREDIT HOURS.....1.

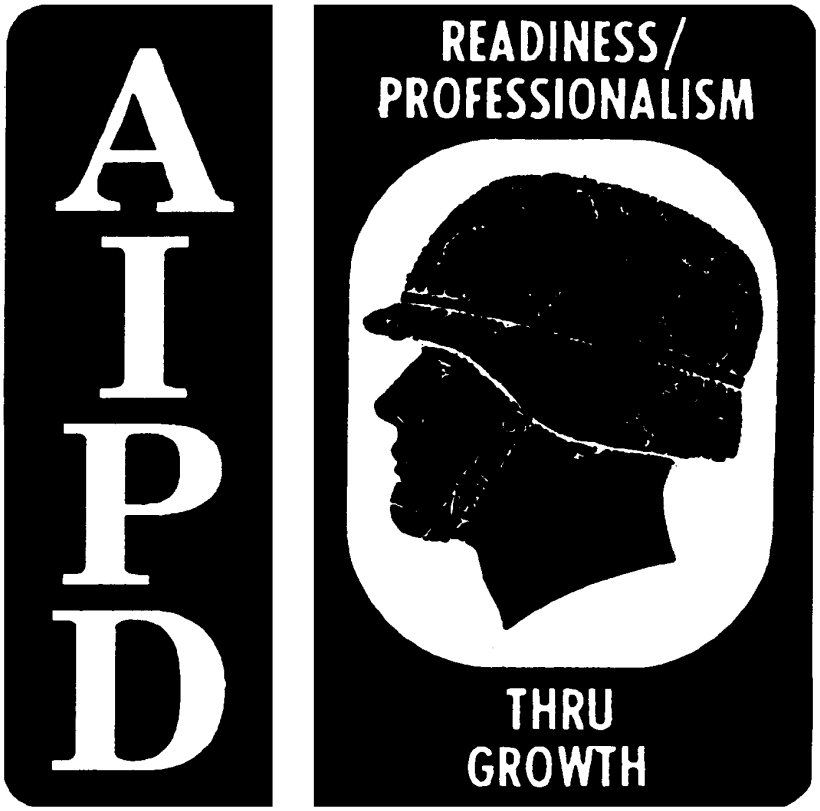
TEXT ASSIGNMENT.....Reference Text 656, pars. 1.1-1.13.

MATERIALS REQUIRED.....None.

SUBCOURSE
TR0675

EDITION
6

MAINTENANCE OF DIESEL-ELECTRIC LOCOMOTIVES AND ROLLING STOCK



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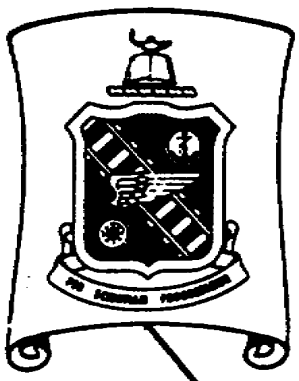
ARMY CORRESPONDENCE COURSE PROGRAM



CORRESPONDENCE COURSE OF THE U. S. ARMY TRANSPORTATION SCHOOL

DIRECTORATE OF TRAINING AND DOCTRINE, COURSE DEVELOPMENT DIVISION, USATSCH

MAINTENANCE OF DIESEL-ELECTRIC LOCOMOTIVES AND ROLLING STOCK

LESSON BOOKLET TRANS SUBCOURSE 675

Fort Eustis, Virginia **June 1976**

Supersedes Trans 675, Maintenance of Diesel-Electric Locomotives and Rolling Stock, Version 1, February 1969.

TRANS SUBCOURSE 675

MAINTENANCE OF DIESEL-ELECTRIC LOCOMOTIVES AND ROLLING STOCK

INTRODUCTION

Maintenance of railway equipment is performed to keep equipment in a safe and serviceable condition. The effectiveness of that maintenance directly affects the efficiency of railway operations, particularly in a theater of operations. Military railway men and all transportation officers should know how, when, and why to inspect and maintain railway equipment.

This subcourse introduces you to the Army's diesel-electric locomotives and rolling stock, regulations that govern railway equipment and maintenance, forms used to guide inspectors and maintenance men in performing their duties, and preventive maintenance indicators for railway equipment.

This is a two-lesson subcourse, including two lesson exercises, lesson solutions, and an examination. Before beginning this subcourse, ensure that your social security number (SSN) or student number and the subcourse number are printed correctly on the response sheet. If either is incorrect, return the sheet to AIPD, calling attention to the error. AIPD will in turn send you a corrected sheet. You must also include your SSN or student number on all correspondence.

This subcourse consists of two lessons and an examination:

		Credit Hours
Lesson 1 -	Army Rail Equipment; The Diesel-Electric Locomotive	1
2 -	Rolling Stock	1
Examination		1
	Total	3

You must complete the lesson exercises under the concept of self-paced instruction. You must grade the exercises yourself, using the lesson solutions. Because of this, we have only forwarded one examination response sheet with this subcourse. You must use this sheet to submit your answers to the examination questions. After successfully completing the examination, you are entitled to three credit hours for the entire subcourse.

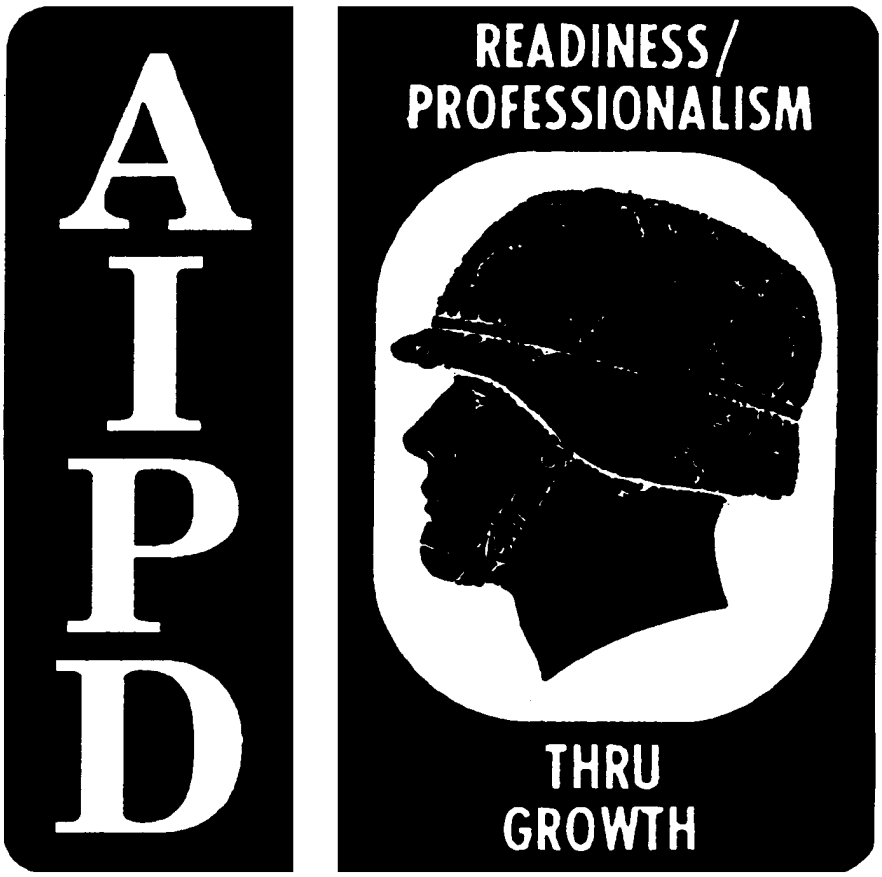
To complete this subcourse, you must--

- Study the text material assigned for each lesson.

SUBCOURSE
TR0660

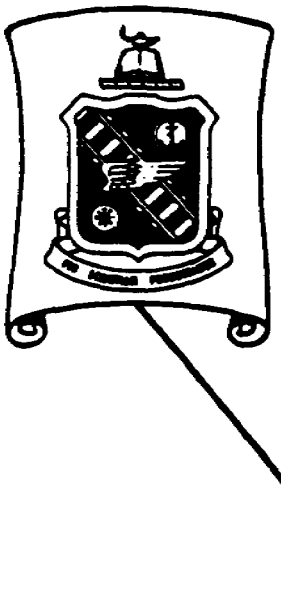
EDITION
6

MILITARY RAILWAY EQUIPMENT



THE ARMY INSTITUTE FOR PROFESSIONAL DEVELOPMENT

ARMY CORRESPONDENCE COURSE PROGRAM



CORRESPONDENCE COURSE OF THE
U. S. ARMY
TRANSPORTATION SCHOOL

MILITARY RAILWAY EQUIPMENT

LESSON BOOKLET
TRANS SUBCOURSE 660

March 1976

Supersedes Trans 660, Military Railway Equipment, April 1972.
TO BE USED WITH REFERENCE TEXT 660, APRIL 1972.

*** * * IMPORTANT NOTICE * * ***

THE PASSING SCORE FOR ALL ACCP MATERIAL IS NOW 70%

PLEASE DISREGARD ALL REFERENCES TO THE 75% REQUIREMENT.

TRANS SUBCOURSE 660

MILITARY RAILWAY EQUIPMENT

INTRODUCTION

Operating a military railroad in a theater of operations requires the combined efforts of many people with various skills. Men are needed to run trains and repair railway equipment; others must maintain the right-of-way and the communications system. Before the railroad begins to operate, however, there is the tremendous task of planning the entire rail operation.

One of the many things a planner must know about is what equipment is available to move military tonnages and who will maintain it to keep supplies and ammunition rolling to the front. That is the purpose of this subcourse; to introduce you to the kinds of equipment found in a military railroad and the characteristics of the knockdown fleet belonging to the Army.

This is a one-lesson subcourse, including lesson exercises, lesson solutions, and an examination. One credit hour is allowed for the entire subcourse. The exercises are to be completed under the concept of self-paced instruction. You will grade them yourself, using the lesson solutions attached to the examination. Because of this, you have received only one examination response sheet for use in submitting your examination solutions.

Follow these steps in completing the subcourse.

(1) Study the text material assigned for the lesson.

(2) After thorough study, answer each question by marking or circling your solutions in the lesson book.

(3) Check your answers against the School solutions on the solution sheet. If you have answered any question incorrectly, look up the text reference given on the solution sheet. Study the reference and evaluate all possible exercise solutions, making sure you understand why the School solution is the best.

(4) When you have finished the lesson to your satisfaction, complete the examination as directed there and mail your solutions to AIPD for grading.

NOTICE TO STUDENT

Trans Subcourse 660

16 March 1976

CORRESPONDENCE COURSE
OF
THE U. S. ARMY TRANSPORTATION SCHOOL

IMPORTANT

Supplement No. 1 to Reference Text 660, Military Railway Equipment, April 1972, is published to make you aware of the field army reorganization that is taking place. DO NOT base your answers to the questions in the lesson exercises or examination on the information in the supplement. Answer all questions based on the material in the reference text.

REFERENCE TEXT
660

SUPPLEMENT NO. 1

16 March 1976

U. S. ARMY TRANSPORTATION SCHOOL

Supplement to REFERENCE TEXT 660, MILITARY RAILWAY EQUIPMENT, April 1972

The theater Army organization is being revised under the Echelons Above Division (EAD) study. The EAD eliminates the field army support command (FASCOM) and its subordinate support brigades and replaces them with a newly formed corps support command (COSCOM). The study concentrates on merging the theater army support command (TASCOM) headquarters with the theater army (TA) headquarters; eliminating the materiel command (MATCOM), with its field depots and COMMZ depot distribution system; establishing the COSCOM in the combat zone and the theater army area command (TAACOM) in the COMMZ as the highest organizational levels of supply and maintenance support in the theater; and incorporating supply concepts relying more heavily on CONUS theater oriented depots for direct supply as close to the using unit as possible.

Department of the Army doctrine covering the new concept has not been published. When the doctrine is published this text will be revised to reflect the new concept.

REFERENCE TEXT
660

MILITARY RAILWAY EQUIPMENT

The information contained herein is provided for instructional purposes only. It reflects the current thought of this school and conforms to printed Department of the Army doctrine as closely as possible. Development and progress render such doctrine continuously subject to change.

U. S. ARMY TRANSPORTATION SCHOOL

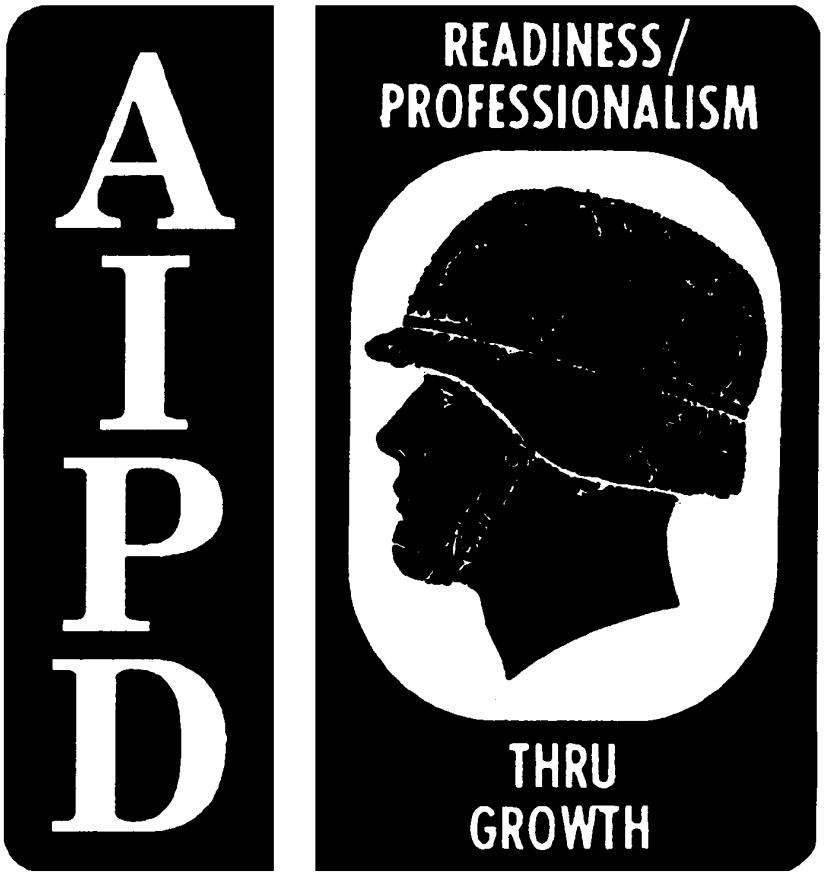
April 1972

Supersedes Reference Text 660, Military Railway Equipment, November 1968.

SUBCOURSE
TR0635

EDITION
8

MILITARY TRAIN OPERATIONS



THE ARMY INSTITUTE FOR PROFESSIONAL DEVELOPMENT

ARMY CORRESPONDENCE COURSE PROGRAM

TRANS SUBCOURSE 635

MILITARY TRAIN OPERATIONS

INTRODUCTION

The transportation railway service (TRS) operates railroads in theaters of operations to support combat forces. To insure that trains operate safely and efficiently, the TRS requires its personnel not only to know but to obey the rules set forth in TM 55-200, Railway Operating Rules. All assigned to the TRS should be familiar with the rules in this manual.

After studying the reference text of this subcourse, you are expected to be able to list some of the rules, define some of the technical terms, and describe the methods of operation and types of trains used in military train operations; to explain train superiority; to describe the kinds of railway signals used in military train operations; and to outline methods and procedures used for operating trains in radioactive areas. The subcourse consists of two lessons and an examination as follows:

	Credit hours
Lesson 1, Railway Rules, Terms, and Types of Trains	1
2, Train Movement Control	2
Examination	1
Total	4

You are not limited as to the time you may spend on the solution of either lesson or the examination.

Text and materials furnished: Reference Text 635, Military Train Operations, November 1972., with annex A.

Upon completion of this subcourse, you keep the reference text and lesson assignment sheets; do not return them with your answer sheets.

LESSON.....Rules and Types of Trains.

CREDIT HOURS.....1.

TEXT ASSIGNMENT.....Reference Text 635, pars. 1.1-1.9.

CORRESPONDENCE COURSE OF THE
U. S. ARMY
TRANSPORTATION SCHOOL

RAIL OPERATIONS, DISPATCHING

LESSON BOOKLET
TRANS SUBCOURSE 638

THE ARMY INSTITUTE FOR PROFESSIONAL DEVELOPMENT
ARMY CORRESPONDENCE COURSE PROGRAM

AIPD
READINESS/ PROFESSIONALISM
THRU GROWTH

Important: Electronic Examination Information

This paper subcourse does not contain the examination. The examination response sheet is included only as a mailing label. You must go to the following web site to complete the examination and submit it for grading.

http ://www .aimsrdl.atsc.army.mil/accp/accp_top.htm

Registered students (those with ACCP userids and passwords) should key in the userid and password to LOGON, then click on the EXAM button to access the examination.

Students who have not yet registered should click on the REGISTER button on the lower right corner of the screen. Follow directions to create a userid and password. Then click on the EXAM button to access the examination.

RAIL OPERATIONS, DISPATCHING
SUBCOURSE TR0638
EDITION 6

14 CREDIT HOURS

INTRODUCTION

He has often been described as the mastermind behind the movement of all freight and passenger trains over a railroad division. He remains entirely in the background; however, his influence is exerted through all tower and station operations along the way who copy and deliver his instructions to the passing train crews. He is the train dispatcher.

Single-track railroading does not change geographically; however the inherent danger in operating opposing trains on the same track does not lessen with the locale. Planning well in advance, exercising a keen mind, issuing proper orders, and making certain they are understood represent the contribution a train dispatcher can make to safe, efficient train movement. Properly interpreting and executing the orders rest with the road crews hauling the moving trains.

While no text can possibly qualify you as a train dispatcher, an understanding of the fundamentals of the subject should place you in a better position to carry out any military assignment you may receive that involves moving troops and supplies by rail. The scope of this subcourse covers the basic principles and fundamentals of dispatching; the duties of those in the dispatch office; dispatcher communications; the right and superiority of trains; and samples of different train orders.

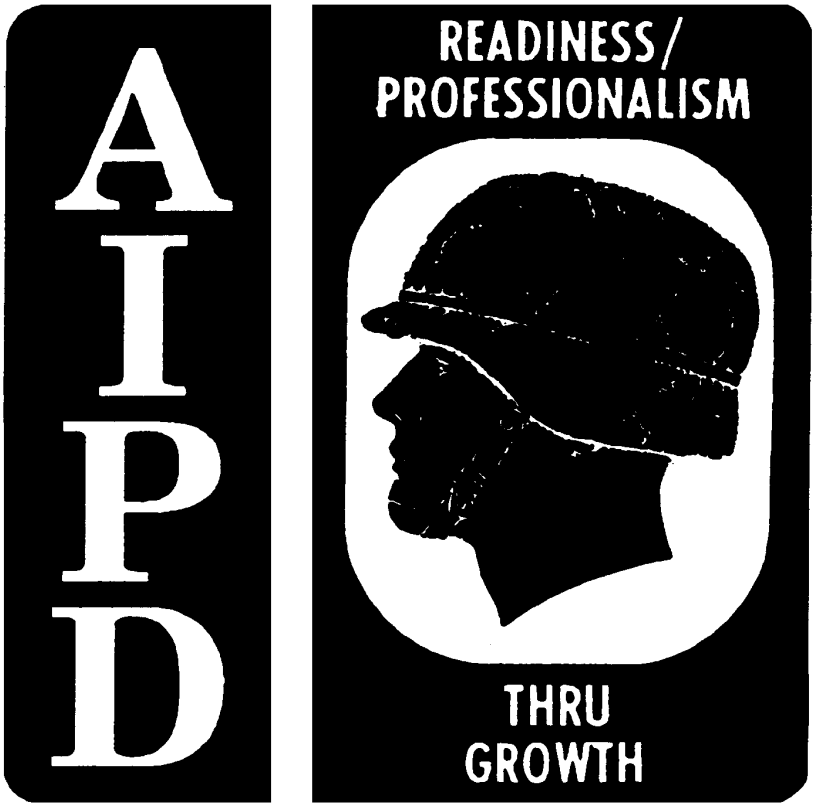
This is a four-lesson subcourse, including four lesson exercises, lesson solutions and an examination:

	Credit Hours
Lesson 1 - Principles	3
Lesson 2 - Documents, Staff, and Communications	3
Lesson 3 - Superiority of Trains	3
Lesson 4 - Train Orders	3
	2

SUBCOURSE
TR0636

EDITION
7

RAIL OPERATIONS, YARD



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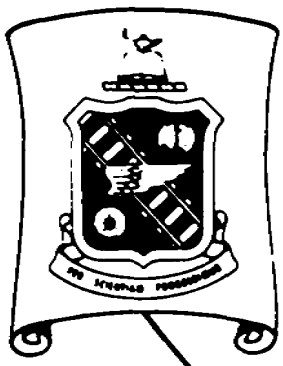
ARMY CORRESPONDENCE COURSE PROGRAM



CORRESPONDENCE COURSE OF THE U. S. ARMY TRANSPORTATION SCHOOL

RAIL OPERATIONS. YARD

LESSON EXERCISES
TRANS SUBCOURSE 636

Fort Eustis, Virginia

Supersedes Trans 636, Rail Operations, Yard, November 1970.

TRANS SUBCOURSE 636

RAIL OPERATIONS, YARD

INTRODUCTION

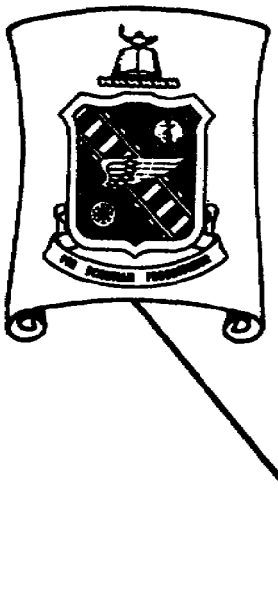
You may have often seen railroads in operation, cars being switched back and forth in busy yards, and trains rolling over the main line, stopping and starting in obedience to mysterious rules and signals. But have you ever stopped to think why these operations are performed and how the railroads do their lob of delivering freight and passengers on time to their destination?

Someday you may take part in operating a military rail yard or terminal. While it is not likely that this subcourse alone can qualify you to operate either, it does introduce you to the procedures and practices you will find in use there. After studying the reference text to the subcourse, you should be able to identify the types of yards and their distinguishing characteristics; to describe the operations and the clerical work involved in breaking up and making up trains and in getting them ready for the main line; and to identify the personnel who perform yard work and describe their duties. Finally, you should know some of the rules governing safety in rail yard operations and what things to guard against while working on and around moving engines and cars.

Because commercial railroading is more familiar than military, civilian practice is taught; and because the great majority of rail traffic is freight, classification yards and road trains are discussed from the standpoint of freight operations. But, military or civilian, passenger or freight, the principles are the same, and they apply as well in a theater of operations as on commercial railroads in the United States.

This subcourse consists of four lessons and an examination, divided as follows:

		Credit hours
Lesson 1,	Rail Yards and Terminals	2
2,	Yard Operations	4
3,	Yard Personnel	2
4,	Safety	1
Examination		2
	Total	11



CORRESPONDENCE COURSE OF THE
U. S. ARMY
TRANSPORTATION SCHOOL

RAILWAY TRACK MAINTENANCE II

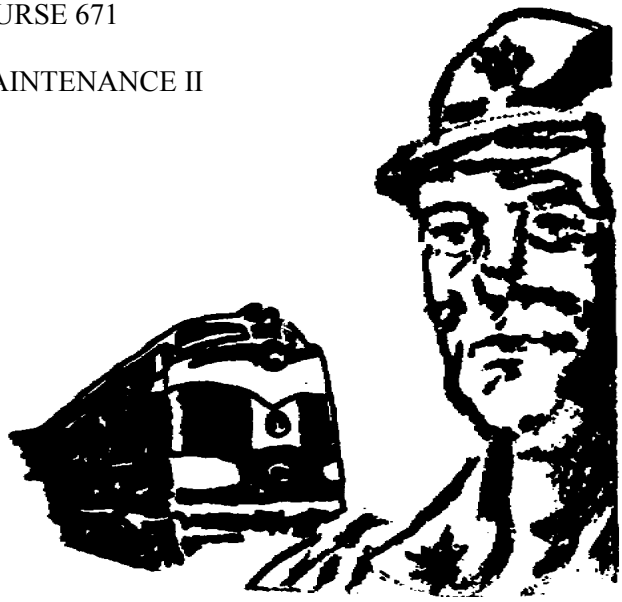
LESSON EXERCISES
TRANS SUBCOURSE 671

February 1971

Supersedes Trans 671, Railway Track Maintenance II, February 1968.

TRANS SUBCOURSE 671

RAILWAY TRACK MAINTENANCE II



INTRODUCTION

In mid-nineteenth century, Major General George H. Thomas said, "The fate of an army may depend on a buckle." If the general had been a railroad man, he might have said something like this--battles cannot be won while soldiers wait for railroaders to deliver a train of ammunition, nor can a rail operating crew deliver such a train while waiting for maintenance-of-way forces to repair the track.

Expediency is the order of the day in a theater of operations; the prompt arrival of trains at their destinations is far more important in wartime than that of any train operated in peacetime. As a student of maintenance of way, you must realize that the shine on the "buckle"--the refinements of track and roadbed described in this subcourse and its predecessor, Trans Subcourse 670--will have to be bypassed in oversea theaters. There, no profit angle exists and no long-range maintenance programs to protect capital investment are involved. Nevertheless, each track maintenance man must recognize the advantage of knowing the maintenance procedures presented in this subcourse. Such knowledge adds to the efficiency needed in performing, planning, and directing the maintenance activities that enable the trains in a theater to keep rolling to fulfill their essential logistic mission.

After studying the reference text to this subcourse, you should be able to explain the types, methods, and principles of routine track maintenance; to describe the function, components, design, location, construction, and maintenance of various types of turnouts; to identify the design, function, and characteristics of the various types of railroad curves; to explain the method of stringlining curves when they get out of line; to explain the function, design and maintenance of highway grade crossings and guard rails; to identify the more important problems of seasonal maintenance; to identify special maintenance problems; and to describe certain principles of maintenance -of-way management.

The subcourse consists of five lessons and an examination divided as follows:

		Credit Hours
Lesson 1,	Track Rehabilitation	3
2,	Turnouts and Special Switches	3
3,	Curves	3
4,	Highway Grade Crossings, Guard Rails, and Seasonal Maintenance	2
5,	Special Problems and Maintenance-of-Way Management	2
Examination		2
	Total	15

Upon completion of this subcourse, you retain the reference text and lesson exercises.

LESSON 1..... Track Rehabilitation.

CREDIT HOURS ..... 3.

TEXT ASSIGNMENT..... Reference Text 671, pars. 1.1 - 1.28.

MATERIALS REQUIRED..... None.

LESSON OBJECTIVE..... To enable you to explain the types, methods, and principles of routine track maintenance.

SUGGESTIONS..... None.

EXERCISES

LESSON ASSIGNMENT SHEET

TRANS SUBCOURSE 671.....	Railway Track Maintenance .
LESSON 2	Turnouts and Special Switches.
CREDIT HOURS.....	3.
TEXT ASSIGNMENT.....	Reference Text 671, pars. 2.1 - 2.37.
MATERIALS REQUIRED.....	None.
LESSON OBJECTIVE.....	To enable you to describe the function, components, design, location, construction, and maintenance of various types of turnouts.
SUGGESTIONS.....	None.

EXERCISES

Weight		**True-False**
		Put a "T" for true and an "F" for false.
2	1.	In a track crossing, the wider the crossing angle the wider the flangeway openings.
2	2.	A derail frog may be substituted for a manganese steel frog.
2	3.	To construct a gantlet track, you need two sets of derail frogs.
2	4.	To divert traffic easily, turnouts are located on curves when possible.

Weight

2 25. To measure the ordinate at B, two men would stretch the string between points:

A. C and A.
B. D and C.
C. B and A.
D. B and G.

2 26. If the throw at point D were a positive number, it would mean that the track must be moved:

A. Downward.
B. Outward.
C. Forward.
D. Inward.

2 27. The dotted line between points E and G indicates a _____ ordinate.

A. Positive.
B. Negative.
C. Zero.
D. Ten percent.

LESSON ASSIGNMENT SHEET

TRANS SUBCOURSE 671.....	Railway Track Maintenance II.
LESSON 4.....	Highway Grade Crossings, Guard Rails, and Seasonal Maintenance.
CREDIT HOURS.....	2.
TEXT ASSIGNMENT.....	Reference Text 671, pars. 4.1 - 4.23.
MATERIALS REQUIRED.....	None.
LESSON OBJECTIVE.....	To enable you to explain the function, design, and maintenance of highway grade crossings and guard rails; and to identify the more important problems of seasonal maintenance.
SUGGESTIONS.....	None.

EXERCISES

Weight **True-False**

Put a "T" for true and an "F" for false.

3 1. Wedge-shaped pusher-type snowplows are designed for removing medium-sized drifts from double-track lines.

3 2. Braces are spiked to the head of the rail when shims are installed.

3 3. Eighty-five pound guard rails are suitable for use where 100-pound traffic rail is used.

3 4. When highway crossings are renewed, the crossties under the highway material should also be replaced.

LESSON ASSIGNMENT SHEET

TRANS SUBCOURSE 671.....	Railway Track Maintenance II.
LESSON 5.....	Special Problems and Maintenance-of-Way Management.
CREDIT HOURS.....	2.
TEXT ASSIGNMENT.....	Reference Text 671, pars. 5.1 - 5.24; annexes B and C.
MATERIALS REQUIRED.....	None.
LESSON OBJECTIVE.....	To enable you to identify special maintenance problems and to describe certain principles of maintenance-of-way management.
SUGGESTIONS.....	None.

EXERCISES

Weight **True-False**

Put a "T" for true and an "F" for false.

2 1. Third rails often carry alternating current at voltages as high as 11,000 volts.

2 2. An interlocking plant is so designed that its control mechanism can be operated to set up opposing movements.

2 3. It is twice as difficult to maintain a two-track main line as it is a single-track one.

2 4. Before work can begin near high-voltage overhead wires, they must be disconnected from the power source and grounded.

CIRRICULUM

FOR RAILROAD APPERNTICESHIP

***** IMPORTANT NOTICE *****

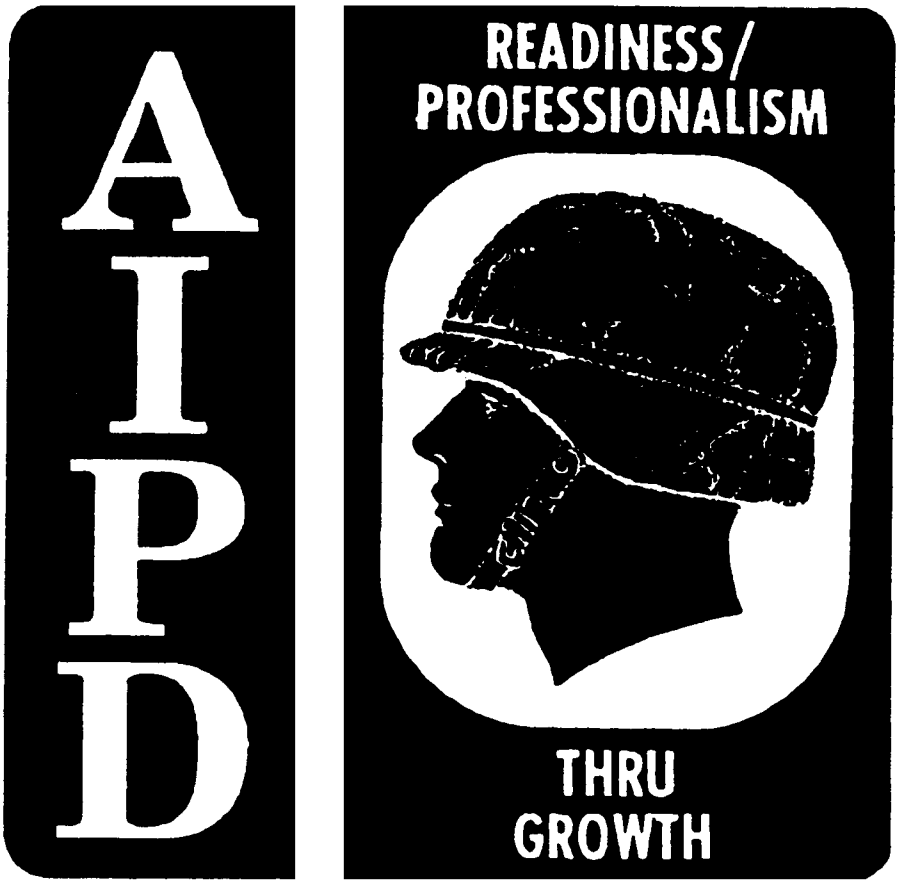
THE PASSING SCORE FOR ALL ACCP MATERIAL IS NOW 70%/

PLEASE DISREGARD ALL REFERENCES TO THE 75% REQUIREMENT.

SUBCOURSE
TR0670

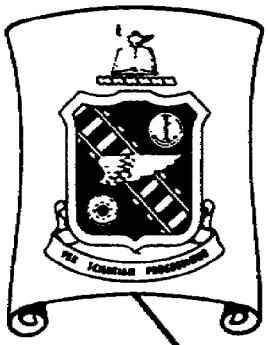
EDITION
8

RAILWAY TRACK MAINTENANCE I



THE ARMY INSTITUTE FOR PROFESSIONAL DEVELOPMENT

ARMY CORRESPONDENCE COURSE PROGRAM



CORRESPONDENCE COURSE OF THE
U. S. ARMY
TRANSPORTATION SCHOOL

RAILWAY TRACK MAINTENANCE I

LESSON EXERCISES
TRANS SUBCOURSE 670

Fort Eustis, Virginia

Finally, you should be able to describe the elements of track: rail, ties, track fastenings, and track devices. The subcourse consists of three lessons and an examination divided as follows:

	Credit hours
Lesson 1, Fundamentals of Railway Engineering	2
2, Roadbed, Ballast, and Drainage	2
3, Track Elements	3
Examination	3
Total	10

Text and materials furnished: Reference Text 670, Railway Track Maintenance I, January 1971.

Upon completion of the subcourse, you are to retain the reference text; do not return it with your answer sheets.

LESSON 1.....Fundamentals of Railway Engineering.

CREDIT HOURS .....2.

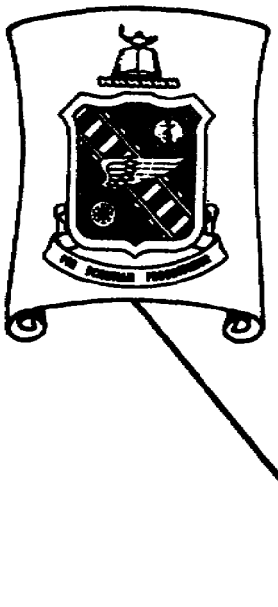
TEXT ASSIGNMENT.....Reference Text 670, pars. 1.1-1.9.

MATERIALS REQUIRED.....None.

LESSON OBJECTIVE.....To enable you to describe the physical characteristics of a railroad, to define the terms used in maintenance of way and track, and to solve the varied problems of the track supervisor.

SUGGESTIONS.....None.

EXERCISES



CORRESPONDENCE COURSE OF THE
U. S. ARMY
TRANSPORTATION SCHOOL

RAILWAY TRACK MAINTENANCE II

LESSON EXERCISES
TRANS SUBCOURSE 671

February 1971

Supersedes Trans 671, Railway Track Maintenance II, February 1968.

		Credit Hours
Lesson 1,	Track Rehabilitation	3
2,	Turnouts and Special Switches	3
3,	Curves	3
4,	Highway Grade Crossings, Guard Rails, and Seasonal Maintenance	2
5,	Special Problems and Maintenance-of-Way Management	2
Examination		2
	Total	15

Upon completion of this subcourse, you retain the reference text and lesson exercises.

LESSON 1..... Track Rehabilitation.

CREDIT HOURS ..... 3.

TEXT ASSIGNMENT..... Reference Text 671, pars. 1.1 - 1.28.

MATERIALS REQUIRED..... None.

LESSON OBJECTIVE..... To enable you to explain the types, methods, and principles of routine track maintenance.

SUGGESTIONS..... None.

EXERCISES

UNITED STATES ARMY

Certificate of Achievement in Safety

is presented to

for outstanding safety performance
underneath the following provisions:

CFR 49 PART 212 STATE SAFETY PARTICIPATION REGULATIONS

from _____ **to** _____

UNITED STATES ARMY

Certificate of Achievement in Safety

is presented to

for outstanding safety performance
underneath the following provisions:

CFR 49 PART 213 TRACK SAFETY

from _____ **to** _____

UNITED STATES ARMY

Certificate of Achievement in Safety

is presented to

for outstanding safety performance
underneath the following provisions:

CFR 49 PART 214 RAILROAD WORKPLACE SAFETY

from _____ **to** _____

UNITED STATES ARMY

Certificate of Achievement in Safety

is presented to

for outstanding safety performance
underneath the following provisions:

CFR 49 PART 215 RAILROAD FREIGHT SAFETY STANDARDS

from _____ **to** _____

UNITED STATES ARMY

Certificate of Achievement in Safety

is presented to

for outstanding safety performance
underneath the following provisions:

CFR 49 PART 216 SPECIAL NOTICE AND EMERGENCY ORDER PROCEDURES: RAILROAD TRACK, LOCOMOTIVE AND EQUIPMENT

from _____ **to** _____

UNITED STATES ARMY

Certificate of Achievement in Safety

is presented to

for outstanding safety performance
underneath the following provisions:

CFR 49 PART 217 RAILROAD OPERATING RULES

from _____ **to** _____

UNITED STATES ARMY

Certificate of Achievement in Safety

is presented to

for outstanding safety performance
underneath the following provisions:

CFR 49 PAR T239 PASSENGER TRAIN EMERGENCY PREPAREDNESS

from _____ to _____

UNITED STATES ARMY

Certificate of Achievement in Safety

is presented to

for outstanding safety performance
underneath the following provisions:

CFR 49 PART 237 BRIDGE SAFETY STANDARDS

from _____ **to** _____

UNITED STATES ARMY

Certificate of Achievement in Safety

is presented to

for outstanding safety performance
underneath the following provisions:

CFR 49 PART 238 PASSENGER EQUIPMENT SAFETY STANDARDS

from _____ to _____

UNITED STATES ARMY

Certificate of Achievement in Safety

is presented to

for outstanding safety performance
underneath the following provisions:

CFR 49 PART 232 BRAKE SYSTEM SAFETY STANDARDS FOR FREIGHT AND OTHER NON-PASSENGER TRAINS AND EQUIPMENT; END-OF-TRAIN DEVICES

from _____ **to** _____

UNITED STATES ARMY

Certificate of Achievement in Safety

is presented to

for outstanding safety performance
underneath the following provisions:

CFR 49 PART 219 CONTROL OF ALCOHOL AND DRUG USE

from _____ **to** _____

UNITED STATES ARMY

Certificate of Achievement in Safety

is presented to

for outstanding safety performance
underneath the following provisions:

CFR 49 PART 231 RAILROAD SAFETY APPLIANCE STANDARDS

from _____ **to** _____

UNITED STATES ARMY

Certificate of Achievement in Safety

is presented to

for outstanding safety performance
underneath the following provisions:

CFR 49 PART 229 RAILROAD LOCOMOTIVE SAFETY STANDARDS

from _____ **to** _____

UNITED STATES ARMY

Certificate of Achievement in Safety

is presented to

for outstanding safety performance
underneath the following provisions:

CFR 49 PART 225 RAILROAD ACCIDENTS/INCIDENTS:
REPORTS CLASSIFICATION, AND INVESTIGATIONS

from _____ **to** _____

UNITED STATES ARMY

Certificate of Achievement in Safety

is presented to

for outstanding safety performance
underneath the following provisions:

CFR 49 PART 218 RAILROAD OPERATING PRACTICES

from _____ **to** _____

Basic Training for Brakemen and Switchmen

Course Objective: This is designed to serve as an introductory course for new railroad personnel with an emphasis on safety. It discusses safe practices in the yard, around trains, getting on and off equipment, brakes, and hand signals.

Who this is for: New railroad employees or supervisors, carmen, machinists and other craftsmen.

Item Code	Lesson Description
BTM.1A	Introduction, responsibilities, railroad engines and cars, end-of-train devices, hand signals, torpedoes, whistle signals, fusees, and block signals
BTM.2A	Getting on and off equipment, track switches
BTM.3A	Coupling and uncoupling equipment, air hoses, air brakes, hand brakes, brake assembly, general safety tips

Item Code	Required Textbook
BKBS	*Basic Training Manual for Brakemen and Switchmen*

Item Code	Full Course Title (Includes Textbook)	Price
BTM1AFC	Basic Training for Brakemen and Switchmen	$88.95

Enrolled students may take individual lessons.
Please contact student services for individual lesson and textbook pricing.

ABDW Control Valve

Course Objective: Inspect, service, repair and test AB single capacity freight car air brake equipment with the ABDW Control Valve. Perform testing, inspection and repairs of freight car and train air brakes.

Who this is for: Carmen, brakemen, maintenance worker, supervisors, inspectors and anyone involved in the repair and proper maintenance of the air brake.

Item Code	Lesson Description
B.15	Freight car brake equipment with ABDW control valve: general information, description of parts, introduction
B.16	Operation of ABDW brake equipment: full release, charging, service positions, emergency positions, release and relay valve functions (Part 1)
B.17	Operation of ABDW brake equipment: full release, charging, service positions, emergency positions, release and relay valve functions (Part 2)

Item Code	Required Textbook
BKABDW	*ABDW Control Valve*
	This book not available separately

Item Code	Full Course Title (Includes Textbook)	Price
B15FC	ABDW Control Valve	$93.95

Enrolled students may take individual lessons.
Please contact student services for individual lesson and textbook pricing.

ABDW Control Valve

Course Objective: Inspect, service, repair and test AB single capacity freight car air brake equipment with the ABDW Control Valve. Perform testing, inspection and repairs of freight car and train air brakes.

Who this is for: Carmen, brakemen, maintenance worker, supervisors, inspectors and anyone involved in the repair and proper maintenance of the air brake.

Item Code	Lesson Description
B.15	Freight car brake equipment with ABDW control valve: general information, description of parts, introduction
B.16	Operation of ABDW brake equipment: full release, charging, service positions, emergency positions, release and relay valve functions (Part 1)
B.17	Operation of ABDW brake equipment: full release, charging, service positions, emergency positions, release and relay valve functions (Part 2)

Item Code	Required Textbook
BKABDW	*ABDW Control Valve*

This book not available separately

Item Code	Full Course Title (Includes Textbook)	Price
B15FC	ABDW Control Valve	$93.95

Enrolled students may take individual lessons.
Please contact student services for individual lesson and textbook pricing.

26L Brake Equipment

Course Objective: Identify the components of the 26-L locomotive brake system used on single and multiple unit operations. Understand the inspections, their application and when they should be done.

Who this is for: Anyone working with 26-L brake systems.

Item Code	Lesson Description
B.41	26L locomotive brake equipment

Item Code	Required Textbook
BKB41	*Air Brake Equipment*

Item Code	Full Course Title (Includes Textbook)	Price
B41FC	26L Brake Equipment	$34.00

26-L Brake Equipment (Instruction Pamphlet No. 74)

Objective: The student will gain an understanding of the 26-C Brake Valve, 26-F Control Valve, and the High Capacity "J" Type Relay Valve. The student will study the operation and functions of those devices that are unique to the 26-L Brake Equipment.

Who This Is For: Carmen responsible for the inspection and repair of the 26-L Brake Equipment and Locomotive Operators who will be using the 26-L Brake Equipment on their train.

Item Code	Lesson Description
BE.1A	26C brake valve, auto brake operation, independent brake operation
BE.2A	26F control valve, J-1 relay valve, MU2A valve, F-1 Selector Valve
BE.3A	Overspeed and safety control functions: with P-2 brake application valve
BE.4A	Automatic split reductions during penalty brake application: with A-1 reduction selector valve

Item Code	Required Textbook
BK26L	*Instruction Pamphlet No. 74*

Item Code	Full Course Title (Includes Textbook)	Price
BE1AFC	26-L Brake Equipment	$122.00

Enrolled students may take individual lessons.
Please contact student services for individual lesson and textbook pricing.

Note: The following three courses were developed in 1971-72 and known as the Chalk Talk Books. The brakes discussed in these books are still being used on some equipment today, thereby making some of the information still valuable.

ABCs of Air Brakes (Chalk Talk One)

Course Objective: The student will gain an understanding of the air brake, the parts, how it works and its roles in the braking action (braking ratio). Understand the differences between brakes used for freight versus passenger cars.

Who this is for: Anyone who works on brakes, or has a general interest in how brakes work.

Item Code	Lesson Description
B.1A	Railway train brake control
B.1B	Brake valve functions
B.1C	Equalization

Item Code	Required Textbook
BKABC	*ABCs of Air Brakes*

Item Code	Full Course Title (Includes Textbook)	Price
B1AFC	ABCs of Air Brakes (Chalk Talk One)	$107.50

Enrolled students may take individual lessons.
Please contact student services for individual lesson and textbook pricing.

FRA Railroad Safety Appliance Standards - Cars (Expanded Course)

Course Objective: Use the Federal Railroad Administration regulations as a resource for: proper-number, dimensions, location, and manner of application of various parts of freight cars, tank cars, caboose and passenger cars (i.e. steps, sills handholds etc.) required to enhance the safety of its use. Apply the requirements to repair jobs and understand the penalties for noncompliance.

Who this is for: Carmen, repairmen, mechanics, or other workers responsible for the correct/standard of repair and safe operating condition of the various parts of railroad cars.

Item Code	Lesson Description
SA.1	Hand brakes, brake steps
SA.2	Running boards, sill steps, ladders
SA.3	Handholds, uncoupling levers, and other house cars
SA.4	Hopper cars, gondola cars
SA.5	Flatcars
SA.6	Tank cars
SA.7	Caboose cars
SA.8	Passenger-train cars with wide vestibules
SA.9	Passenger train cars with open end platforms
SA.10	Passenger train cars without end platforms
SA.11	Cars of special construction

Item Code	Required Textbook
BKSAS	*Safety Appliance Standards (Code of Federal Regulations)*

Item Code	Full Course Title (Includes Textbook)	Price
SA1FC	Railroad Safety Appliance Standards (Exp.)	$273.35

Enrolled students may take individual lessons.
Please contact student services for individual lesson and textbook pricing.

Anti–Friction Bearings

Course Objective: This course was designed for the student to gain a general knowledge of bearing types and selection factors to consider in choosing a suitable bearing for a specific purpose, installation and operation. Bearing charts are provided for comparison types and where used.

Who this is for: Carmen, machinists, mechanics, shop supervisors or anyone wishing to gain a basic knowledge of bearings, types, characteristics and general use.

Item Code	Lesson Description
BE1A	General information on anti-friction bearings

Item Code	Required Textbook
BKBF	*Pocket Book of Anti-Friction Bearings*

Item Code	Full Course Title (Includes Textbook)	Price
BF1AFC	Anti-Friction Bearings	$33.25

Basic Refrigeration (Thermo King)

Course Objective: This course was designed to explain the fundamentals of refrigeration as well as the theory of how it works and why. Learn to recognize various types of refrigeration systems, components, operation and servicing. Use troubleshooting charts, temperature-pressure chart, refrigeration and electrical definitions as aids in learning about Thermo King units.

Who this is for: Anyone interested in learning the basics and theory behind refrigeration of Thermo King Units.

Item Code	Lesson Description
TK.1	Fundamentals of refrigeration, theory of mechanical refrigeration
TK.2	Types of refrigeration: RT, RL, three-way valve, RC

Item Code	Required Textbook
BKTHERMO	*Thermo King Manual on Basic Refrigeration Units*

Item Code	Full Course Title (Includes Textbook)	Price
TK1FC	Basic Refrigeration (Thermo King)	$58.00

Enrolled students may take individual lessons.
Please contact student services for individual lesson and textbook pricing.

FRA Freight Car Safety Standards

Course Objective: The student will use the Federal Railroad Administration (FRA) Freight Car Safety Standards booklet as a resource and guideline in determining when equipment is defective, i.e., suspension system, car bodies, draft system, stenciling, journals and lubrication systems, as well as inspection periods and civil penalties for violations of defects.

Who this is for: Carmen, car inspectors, stencilers, shop supervisors and others responsible for the correct repair/maintenance and standards of freight cars.

Item Code	Lesson Description
FSS.1B	General
FSS.2B	Freight car components, restricted equipment, stenciling, Appendices A-D

Item Code	Required Textbook
BKFSS	*Railroad Freight Car Safety Standards (Code of Federal Regulations)*

Item Code	Full Course Title (Includes Textbook)	Price
FSS1BFC	FRA Freight Car Safety Standards	$55.25

Enrolled students may take individual lessons.
Please contact student services for individual lesson and textbook pricing.

Mathematics

Course Objective: The student can use this as a refresher course on a review of basic math (fractions, decimals, addition, subtraction, multiplication, percents) to squares and square root-cubes-exponents as well as formulas and plane figures-mensuration.

Who this is for: Anyone desiring a review of basic math.

Item Code	Lesson Description
BA.3A	Fractions: Addition, subtraction, multiplication
BA.4A	Fractions: Cancellation, mixed numbers, division
BA.5A1	Decimal: Addition, subtraction, multiplication
BA.5B1	Division of decimals-decimal equivalents
BA.61	Percentage discounts
BA.7	Squares and square roots, cubes, exponents
BA.8A	Ratio and proportion
BA.9	Formulas
BA.10A	Basic geometry

*** A separate booklet is required for each lesson**

Item Code	Full Course Title (Includes Textbook)	Price
BAFC	*Mathematics*	$297.00

Enrolled students may take individual lessons.
Please contact student services for individual lesson and textbook pricing.

Basic Training for Brakemen and Switchmen

Course Objective: This is designed to serve as an introductory course for new railroad personnel with an emphasis on safety. It discusses safe practices in the yard, around trains, getting on and off equipment, brakes, and hand signals.

Who this is for: New railroad employees or supervisors, carmen, machinists and other craftsmen.

Item Code	Lesson Description
BTM.1A	Introduction, responsibilities, railroad engines and cars, end-of-train devices, hand signals, torpedoes, whistle signals, fusees, and block signals
BTM.2A	Getting on and off equipment, track switches
BTM.3A	Coupling and uncoupling equipment, air hoses, air brakes, hand brakes, brake assembly, general safety tips

Item Code	Required Textbook
BCBS	*Basic Training Manual for Brakemen and Switchmen*

Item Code	Full Course Title (Includes Textbook)	Price
BTM1AFC	Basic Training for Brakemen and Switchmen	$88.95

Enrolled students may take individual lessons.
Please contact student services for individual lesson and textbook pricing.

ORGANIZATION
Postal-ADDRESS
-CODE
ORGANIZATION-
USPS-Postal-
Address-
Delivery

ORGANIZATION
US-PC-Last Line
-ADDRESS TEXT

ORGANIZATION
USPS PRIMARY
TEXT
ORG USPS ADDRESS
SECONDARY
TEXT

MTMFC - Audio Book

DOD Mail Ordered Manual
- TM - Hand Receipt

DA eAMMS 25-30

MIWUAH

Rail Road Police

Office of Hazardous
materials and
Enforcement

Title 22
Detectives and
Private Police

49 CFR Part 207
Rail Road Police
Officers
49 CFR Part 209
Rail Road Safety
Enforcement
Procedures

Hara - Radio Frequency

~~Railroads~~ - ~~Prowords~~ ~~CFR [illegible] 220~~

Communications I ETM Railway Operation
Safety OPS

FM 21-60 - Visual Signs
Flags and Signals

American Railway
Signaling Principles and
Practices

~~[illegible] Chapter 2~~

Symbols, Aspects, ~~1929~~ 1929

Indications ~~1956~~ 1956

~~1946~~ 1946

published by Signal Section,
A.A.R.

30 Vesey Street,
New York 7, N.Y.

~~[illegible]~~

~~PART 225~~ Part 220

~~Railroad~~ CFR 49

RailRoad Commission

CFR49 Part 241 US Locational
For Dispatching CR US Rail [illegible]

COMDTINST M4610.5A

United States Department of Homeland Security
United States Coast Guard

TRANSPORTATION OF FREIGHT MANUAL

US ARMY RAIL OPERATIONS
FM 4-01.41

TO - TOP AND TAMMS PAMMS

TOP - 12-500

TRANSPORTABILITY

1-2-501 Rail Impact Test

PAMMS ~~[illegible]~~ 738-760

TAMMS

- MIL-R-52760

Milspecs Railway Car, Box, End and Side Doors

56½ inch Gage, 70-Ton ~~[illegible]~~ Wheel

For Domestic Ser

DOE DOD manipulate

7140.EOR and standard of DOD

Committee

COS. [illegible] Calibration order

Model 15-B-160

TRACK MAINTENANCE

CFR 49 part 213
TRACK SAFETY

TI 850-02 Railroad
Design and
Rehabilitation

Railroad TRACK
STANDARDS

DOD TRACKAGE

TM 5-627
US ARMY ~~[illegible]~~
Maintenance of Trackage
~~[illegible]~~

CFR 49 part 212
State safety
participation
regulations

HAZMAT

Hazhouse
The Hazardous
Materials Regulation
Parts 100-185
Required Hand Receipt

NAVFAC P-306 w P-301
CREW LICENSING
~~Chapters IV Cr~~

Examination

ORGANIZATION
Telecommunications
~~Element~~
NETWORK
Element
Address
TEXT

ORGANIZATION
TELECOMMUNICATION
NETWORK
ELEMENT TYPE
CODE

ORG TELE NET
REASON CODE

SENSOR FREQUENCY
BANDWIDTH
QUALITY

CSARM Maintenance Railway Car &
TM 55-203

SI-om Maintenance Training
Manual for
Superliner
Passenger
Cars

KICK-R-2800

Railway Car Spotter,
Self Propelled Geodorded

49 CFR part 236
rules and standards are
inspection, governing the
installation, inspection
maintenance and repair
designal and train control
systems, devices and
appliances

CS Navy care
Electrician's
Mate

NAVEDTRA 14344

CS Navy Fluid Power
NAVEDTRA
1446

Sincere CS Machinery Repair
CD1403 Course

AIPD Step Safety

TM 55-2210-223-12

Locomotive Diesel
56 1/2 inch gauge
60 ton 500hp
0-4-4-0-model

Wabo Standard No 27-13
Attn order

Wabo welder and welding
operator performance
qualification standard
for structural steel
o steel stud
o reinforcing steel
o seismic resistant
[illegible]

SUBCOURSE OD1654
welding operators II
Edition 8
AIPD

Subcourse OD1650 edition 8
AIPD welding theory

TRAINING CIRCULAR No. 9-524

US Army quartermaster school
[illegible]
TC 9-524

Federal Rail Road
Administration

Rail Road Rehabilitation
and Improvement
Financing Program
Loan Application

FRA F 216

Form

49 CFR PART 256 rail road
Financial Assistance Programs
49 CFR Part 260
Regulations governing
Loans and Loan guarantees
under the Rail Road
Rehabilitation and Improvement
Financing Program
49 CFR PART 261
Credit assistance for
Surface transportation
projects