

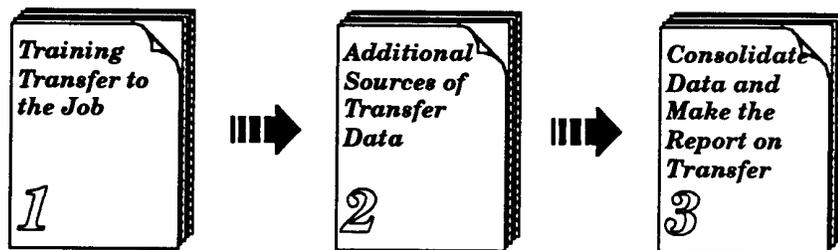
TRAINING EVALUATOR COURSE

M O D U L E S E V E N

S T U D E N T W O R K B O O K

***Evaluation of Training
Transfer***

MODULE 7 LESSONS



U.S. Army Training and Doctrine Command
Training Development and Analysis Directorate
Ft. Monroe, VA 23651-5000

SEPTEMBER 1992

TRAINING EVALUATOR COURSE

Evaluation of Training Transfer

PROPONENT ▼.....
TRADOC Schools, Integrating Centers, and HQ TRADOC developed the materials that make up the Training Evaluator Course as a team effort. We acknowledge the work of all individuals and organizations that directly participated in this effort. We thank them for their support and congratulate them on a job well done.

The proponent for this document and the Training Evaluator Course is the Commander, Headquarters, U.S. Army Training and Doctrine Command (HQ TRADOC). Send comments and recommendations on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to Commander, HQ TRADOC, ATTN: ATTG-CD, Fort Monroe, VA 23651-5000. Make telephone inquiries by calling DSN 680-5590 or COMM (804) 728-5590.

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■ **INTRODUCTION**

**PURPOSE OF
WORKBOOK**

▼.....
This workbook is one of a series of workbooks that, with other training materials, is used in the Training Evaluator Course. The course was developed primarily for new training evaluators assigned to the Directorate of Evaluation and Standardization (DOES) in each TRADOC school. Although designed primarily for DOES personnel in TRADOC schools, the training may be beneficial to other personnel who have training evaluation responsibilities.

The Training Evaluator Course consists of a series of training modules. Each module will train you on a specific task or tasks that DOES training evaluators perform. This workbook will be your guide as you work through Module 7. The other modules that make up this program are shown in the table below.

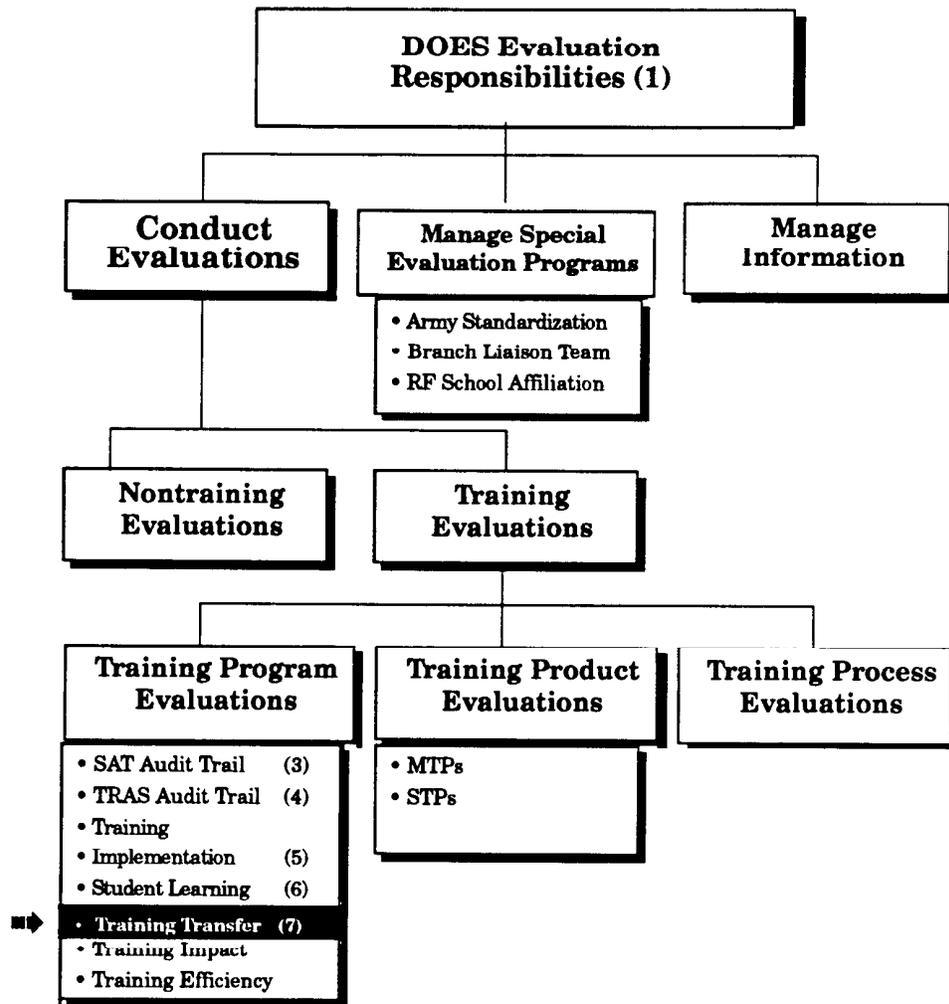
**Modules In the
Training Evaluator Course**

1. Introduction to DOES and Training Evaluation
2. The Evaluation Process

3. Evaluation of SAT Audit Trail Documents
4. Evaluation of TRAS Audit Trail Documents
5. Evaluation of Training Implementation
6. Evaluation of Student Learning
7. **Evaluation of Training Transfer to the Job**

This module of the Training Evaluator Course provides guidance on conducting an evaluation of training transfer to the job from a course at your school. Figure 1 on the next page shows the relationship of this module, which is highlighted, to the other modules in the course. The figure also shows how the DOES responsibility of evaluating training transfer to the job relates to the evaluation responsibilities of DOES.

Figure 1
DOES Evaluation Responsibilities
with Course Module Numbers



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HOW TO USE THE WORKBOOK

▼.....
This workbook and all other materials associated with the Training Evaluator Course were designed for you to use in a classroom situation with a course manager available. This course manager will help guide you through the various activities, provide feedback to you on your work, answer your questions, and provide any other assistance you require. Although we recommend that you complete this workbook in a classroom situation, it can stand alone; you can complete it without assistance from a course manager, much like a correspondence course. If you work through the workbook by yourself, ignore the references made to course managers in the workbook. If you are using the workbook in a classroom situation with a course manager available, as it is intended to be used, follow all directions.

Following this introduction, you will complete a series of activities, including short reading assignments. To reinforce the readings, you will be required to complete a short exercise following some readings. In these exercises, you will be asked to answer questions or perform certain skills discussed in the reading. After each exercise, the course manager will provide you feedback on how well you did on the exercise.

When you complete the workbook, you will be directed to see the course manager, who will provide you an End-of-Module Exercise. After you complete the End-of-Module Exercise, the course manager will check your work. The course manager will give you feedback on the exercise and then either direct you to do additional exercises in this module or provide materials for the next module.

As you have probably noticed, there is blank space on the left side of each page in this workbook. You can use this space for writing notes if you desire.

Take your time working through the workbook. If you have any questions, don't hesitate to ask the course manager.

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**MODULE
OVERVIEW**

▼.....
One of your responsibilities in DOES is to evaluate the training programs (courses) conducted within your school. As we discussed in Module 1 of this course, there are different types of evaluations. Training program evaluations can be categorized based on these types. The six types of training program evaluations are shown in the table below. This module will focus on the fourth type of evaluation, which involves evaluating training transfer to the job from a training course.

**Table 2
Types of Training Program Evaluation**

TYPE OF EVALUATION	KEY QUESTION (addressed by the evaluation)
1. Audit Trail	Was training developed using a Systems Approach?
2. Implementation	Are they training the right things, and are they training them to standard?
3. Student Learning	Did the students learn?
4. Transfer	Does training transfer to the job?
5. Impact	Does training meet unit needs?
6. Efficiency	Was training efficient?

Once students have graduated from an Army course, the question becomes, "Can graduates adequately perform the jobs they were trained to do by the course?" If they cannot, then the Army has wasted money, time, and personnel in the training program. This module will provide guidance on

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determining if, in fact, the training in question has transferred to the job.

**BASIC
DEFINITIONS**

▼.....

Baseline Data: Valid and reliable information about the current level of performance of the student population. This data can be used to confirm the need to develop new instruction or to assess differences between student performance before (at baseline) and after instruction.

Fidelity: In Job Performance Measures (JPM), the extent to which conditions, actions, standards, and cues of a JPM approximate those of a task. In training devices or simulators, the accuracy with which simulators reflect that which they simulate.

Job Performance Measure (JPM): The major procedural steps (elements) necessary to perform a task. A step identifies the behavior that has practical meaning to the task performer. Performance measures should support the standard.

[See Job Aid 7a.]

Job Performance Test: An instrument used to determine whether or how well an individual can perform a job.

[See Job Aid 7a.]

DISCUSSION

▼.....

The primary purpose for conducting an evaluation of training transfer to the job is to find out whether students who successfully complete training can do, to established standards, the job for which they were trained. A second purpose of this type of evaluation is to ensure that the job is still the same as when you did the job analysis. In a sense this revalidates the original task list. It is part of the External Evaluation process. External evaluation differs from internal evaluation in two major ways. Internal evaluation is conducted during the analysis, design,

Evaluation of Training Transfer

development, and implementation phases of SAT. External evaluation is conducted after students have completed their training programs. Secondly, internal evaluation is concerned with student achievement of course objectives while external evaluation is concerned with graduates' abilities to perform the jobs for which they were trained. External evaluation also assesses the components of a job; if the job tasks performed are, in fact, the same as those identified in the analysis phase. After the data are collected, they must be analyzed and recommendations for improvements made. TRADOC Regulation 350-15 states, "The results of external evaluations should substantiate assumptions and decisions or cause changes in programs."

- LESSON 1** ▼.....
This lesson gets the DOES evaluator started in conducting an evaluation of training transfer to the job. It includes planning guidelines and questions that should not be missed in your research.

- LESSON 2** ▼.....
The importance of alternate sources of information are discussed in this lesson. The AOSP and CODAP are described, their value mentioned, and the limitations of using such sources.

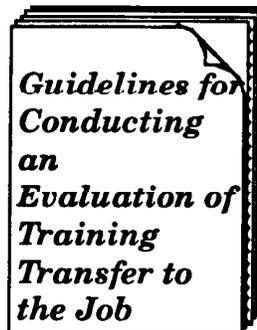
- LESSON 3** ▼.....
The DOES evaluator is given directions for formatting his final report as well as suggestions for guiding his recommendations.

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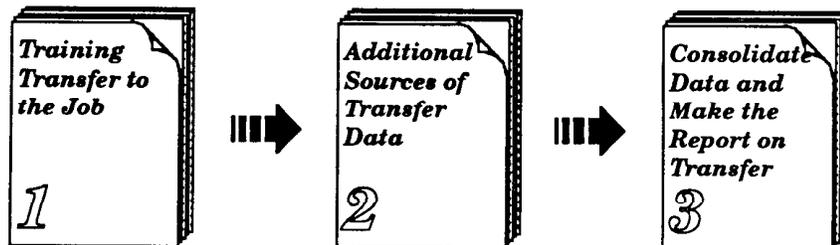
LESSON

1



***Guidelines for Conducting
an Evaluation of Training
Transfer to the Job***

MODULE 7 LESSONS



U.S. Army Training and Doctrine Command
Training Development and Analysis Directorate
Ft. Monroe, VA 23651-5000

■ **LESSON INTRODUCTION**

In this lesson we will discuss:

- Planning the Training Transfer Evaluation.
- Who will provide the data.
- What data are required.
- Job performance measures.

■ **LESSON OBJECTIVE**

The training objective for this lesson of Module 7 is shown below. This objective includes: the **action** you will be able to perform at the conclusion of this lesson, the **conditions** under which you will be able to perform this action, and the **standards** to which you will be able to perform the action.

Conditions - Given the Job Aids 7a, 7b, and 7c, this workbook, any other references required; and access to units, graduates, and their supervisors

Action - Conduct an external evaluation.

Standards - You must plan so that necessary data is collected from appropriate personnel.

■ **LESSON ACTIVITIES**

**PLAN THE
EVALUATION**

▼.....
Before beginning the training transfer evaluation, you need to make some important decisions as to how the evaluation will be conducted. The following determinations must be made:

1. What data are required.
2. Who will provide the data.
3. When will the training transfer evaluation take place.
4. How will the data be gathered.

**DETERMINE
WHAT DATA
ARE
REQUIRED**

By making comparisons between the baseline data and data gathered from the other sources, you will be able to obtain at least partial answers to questions like the following:

1. Do graduates of the current instructional program show satisfactory performance on the Job Performance Measures (JPM)?
2. Do a greater percentage of graduates of the current instructional program show satisfactory performance on the JPMs than graduates of older courses or training methods?
3. Do graduates of the current instructional program require less on the job training (OJT) than graduates of other courses or training methods?

**WHO WILL
PROVIDE THE
DATA**

An evaluation team, usually made up of school personnel, may gather data from several sources:

1. Baseline data gathered before development of instruction was started and/or when instruction was completed.

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2. Graduates of the training who are now working on the job.
3. Supervisors of the graduates above.
4. Records of students' performance during instruction.
5. Any performance data available on students trained in older courses or by means of different training methods.

In addition to the above, check out some of the graduates who are now assigned to other jobs. Why were they assigned to other jobs? Were they first assigned to the job for which they were trained and then reassigned to a different job, because they could not do the first one?

JOB AIDS



▼.....
Turn to Job Aids 7a, 7b, 7c, and 7d for a discussion of Job Performance Measures (JPM) and examples of questions that need to be asked to determine if training transfer to the job has taken place.

**DETERMINE
WHEN THE
EVALUATION
WILL TAKE
PLACE**

In general, you will not want to contact a graduate or the graduate's supervisor until the graduate has been on the job for at least 30 days. It usually takes that long for the graduate to get some feel of how well the instruction prepared him for the job (assuming that the instruction was worthwhile). It also takes the graduate about 30 days to understand the real job. In addition, it probably will take that long for the supervisor to get a clear picture of how well the new graduate can perform.

Conversely, do not wait more than 90 days before contacting graduates and supervisors. After three months, the graduate will be hard pressed to remember details of the instruction. They will likely have a difficult time making realistic judgments about how well it prepared them for the job. Furthermore, the supervisor, more often than not, has difficulty in recalling intervening training and the graduate's initial capabilities.

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DETERMINE HOW THE DATA WILL BE GATHERED

The primary methods of collecting training transfer data are:

1. Job Performance Measures (JPM)
[See Job Aid 7a.]
2. Questionnaires
3. Personal Interviews

Ideally, you will send questionnaires to as many graduates and their supervisors as possible, and conduct personal interviews with a random sample of graduates and their supervisors in the field. The job performance evaluation approach is usually conducted by a team of subject matter experts (SME)/evaluation experts who gather data from actual observation of the graduates on the job and from JPMs.

COLLECT DATA

The actual collection of training transfer data is a relatively straightforward group of procedures once a detailed plan has been prepared. These procedures are:

1. Collect baseline data.
2. Collect job performance evaluation data.
3. Collect questionnaire data.
4. Collect personal interview data.
5. Obtain records of students' performance during instruction.

COLLECT BASELINE DATA

Gather baseline data with the JPMs in order to confirm or deny the conclusion that the tasks selected for training are not being adequately performed by job incumbents.

A baseline study is simply researching what currently exists. Use it to confirm the need for the development of new instruction, or once the instruction is developed, to provide data for the external evaluation of the new instruction. In order to give meaningful results for the first purpose, a baseline study must satisfy two requirements:

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1. The JPMs must yield reliable and valid information.
2. The persons to whom the JPMs are administered must be representative of the total population to whom the results will apply.

Additionally, to satisfy the second purpose, the group on whom data is gathered must not be substantially different from the group on whom the external evaluation data will be gathered.

**JOB
PERFORMANCE
MEASURES
(JPM)**

▼.....
JPMs test whether or how well an individual can perform tasks. JPMs are the steps to perform a task. It represents the best approximation to a perfect test that can be made, considering costs, time, and ability to measure. Job Performance Measures are used to:

1. Separate people: those who can satisfactorily do the task and those who cannot.
2. Serve as the fundamental basis for determining correct task performance.
3. Form the basis for tests for promotion, tests to ensure that units are in an appropriate state of readiness, and any other measures of MOS/officer branch/Area of Concentration (AOC) proficiency.

Using JPMs assures some degree of fidelity between job performance and training. This justifies the investment required to construct and validate the JPMs. Since so much depends on the JPMs, a heavy responsibility rests on those who construct and validate them.

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JOB PERFORMANCE TEST ▼.....
While JPM tests performance on a task, a Job Performance Test is an evaluation used to determine whether or how well an individual can perform a job. A Job Performance Test may include either all of the tasks for a particular job or a subset of the tasks.

PREDICTIVE VALIDITY ▼.....
Predictive validity is discussed in Module Six concerning Criterion-Referenced Tests (CRT). Predictive validity is also important for JPMs. A JPM is said to have good predictive validity if those who score high or pass the JPM are those who can perform the task well. The ideal JPM would have perfect predictive validity.

When it is practical to measure the task as it is actually performed on the job, it is possible to determine the predictive validity of the related JPM. In these cases, the primary objective in developing JPMs is to achieve the highest possible predictive validity, while, at the same time, keeping testing costs, time, and safety within acceptable limits.

Paper and pencil tests generally have low predictive validity, but this depends upon the type of test and task being tested. There are two types of tests which are particularly suitable for measuring performance with paper and pencil. The first concerns those tasks that are accomplished by using paper and pencil, e.g., a unit commander reviewing a strength report prior to authentication. The second type of task where paper and pencil tests would be applicable is one in which a mental discrimination is the most important aspect of the task. An example of this type might be the selection of an avenue of approach for an infantry attack. Assuming that the soldier is provided adequate information concerning weather, enemy, and terrain, and that there are only six viable avenues of approach with one clearly best, there would certainly be no strong objection to having a paper and pencil test. This would be a medium high physical fidelity test.

Evaluation of Student Learning

PHYSICAL FIDELITY ▼.....
The physical fidelity of a JPM refers to the extent that the actions, conditions, cues, and standards of the JPM approximate those of the task. Having high physical fidelity does not always ensure the predictive validity will be high. For example, many combat tasks cannot be duplicated in a training environment or a testing environment. The danger to personnel, equipment, and costs would be too high. Thus marksmanship in combat can only be approximated by providing short reaction time “pop up” targets with varying distances. The predictive validity may be low because no one knows what an individual soldier will do when the bullets are flying around him, and he has to apply marksmanship principles. The training/testing cost is too high to ensure his performance. Actual combat is the only valid measure.

SIMULATION ▼.....
Simulation, broadly defined, is any change from reality or any imitation of reality. When a test cannot be given under real conditions, some form of simulation must be used. Marksmanship with “pop up” targets simulate combat marksmanship conditions.

TESTING CONSTRAINTS ▼.....
If there were no constraints of time, money, personnel, facilities, and other resources, every JPM could be identical to the task it is intended to measure. That is, the JPM would consist of observing job incumbents while they performed the task on the job and noting whether or not they met the job standards. However, since constraints do exist, the JPMs often will be different from the tasks. The first step in developing JPMs that have high predictive validity, high physical fidelity, or both is to analyze the task to determine what testing constraints apply to that particular task. The following practical constraints can force a change from a higher to a lower physical fidelity JPM. Note that these constraints are all interrelated. Time availability, manpower availability, equipment availability, and costs are often all different aspects of the same problem.

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- TIME** Often it is impractical to test the task, as it is stated, in the available time. For example, an extended march through marshy terrain during inclement weather would be hard to program. Time limits must be placed on test administration which in turn limits the amount of time that can be spent on each JPM. If performance of some of the tasks requires more time than is available for testing, the JPM can use a sampling of the task elements.
- MANPOWER** Manpower availability can also impose impractical constraints. Suppose you wanted to test the performance of the assistant gunner on an M109 155MM Self-Propelled Howitzer. Under ideal conditions you would need at least a gunner, the assistant gunner, three cannoneers, a driver, and range safety personnel in order to fire the artillery piece. It would be preferable to arrange JPMs for the whole crew simultaneously, but care must be given to ensure that each position is scored separately and that the substandard performance of one will not negate the performance tests of the others.
- FACILITIES/
EQUIPMENT** Often sufficient equipment or facilities are not available for test administration. This is especially true for sophisticated equipment and very specialized facilities. An example of a severe practical constraint concerning equipment availability might involve a course on trouble-shooting a terrain-following radar system. The preferred JPM may include planting a bug in the system and having a job incumbent locate the problem then replace or repair the necessary parts. However, this radar system is sufficiently complex and costly that testing is prohibited on the actual equipment. Another example is troubleshooting a computer: The downtime of the computer may be so costly as to negate its use for testing purposes.

Evaluation of Student Learning

**OTHER
CONSTRAINTS**

There are other less common practical constraints which you may encounter in evaluating job performance. These include, but are not limited to:

1. Logistics
2. Supervisory effectiveness
3. Communications
4. Ethical considerations
5. Legal considerations

Remember that in most cases constraints are interrelated. Considering the limitations in equipment, personnel, time, space, safety requirements, and other factors, it is obvious that complete fidelity is not always practical or desirable. In these cases the JPM developed must be reviewed as the best possible trade-off with reality.

■ **LESSON REVIEW AND SUMMARY**

During this lesson we discussed the following key points.

1. The DOES evaluator must determine who, what, when, and how about a training transfer evaluation before its actual beginning.
2. Baseline data, graduates, supervisors, an evaluation team, and student records usually provide the bulk of training transfer data.
3. A training transfer evaluation should be conducted between 30 to 90 days after graduation for those graduates who are working on the job for which they were trained.
4. The primary methods of collecting training transfer data are Job Performance Measures (JPM), questionnaires, and personal interviews.

■ **END-OF-LESSON EXERCISE**

For each of the following situations, indicate which Job Performance Measures (JPM) are or are not appropriate for measuring the conditions, actions, and standards required by the task. For those JPMs that are not appropriate indicate what the problem(s) is (are) with the JPM. Assume that the tasks are written correctly.

1. **Task:** Under a variety of conditions, the motor transport operator will drive a 5-ton truck with trailer from a specified point to a specified destination.

JPM: Action: Drive the 5-ton truck with trailer,

Conditions

Standards

- | | |
|-----------------------|-------------------------------------|
| a. Over a ditch | without getting stuck |
| b. Over a rock bed | without getting stuck |
| c. Over a sand trap | without getting stuck |
| d. Down a steep slope | using proper gears and brake action |
| e. Up a steep slope | using proper gears |

Appropriate _____

Not Appropriate _____

2. **Task:** Engage an enemy target with the M60 machinegun.

JPM: The soldier being evaluated, acting as gunner, is provided: a zeroed M60 machinegun, scorecard, targets, and 616 rounds of linked ammunition. The soldier must obtain the minimum qualification scores on the ten meter and transition ranges.

Appropriate _____

Not Appropriate _____

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3. Task: The demolition specialist will set explosives and blow up a bridge capable of supporting heavy armored vehicles.

JPM: The demolition specialist, given the appropriate explosives, will set the explosives and render a bridge incapable of supporting armored vehicles.

Appropriate _____ Not Appropriate _____

4. Task: Perform mouth-to-mouth resuscitation.

JPM: Perform mouth-to-mouth resuscitation on a subject who has stopped breathing.

Appropriate _____ Not Appropriate _____

5. Task: Clear a demolition misfire.

JPM: Action: Clear a nonelectric misfire.

Conditions: The soldier is provided a nonelectric demolition charge that has misfired, a demolition block, M2 crimper, time-blasting fuze, nonelectric blasting cap, fuze igniter, firing wire, M51 blasting-cap test set, and a blasting machine. If the demolition block has a threaded capwell, an MIA four printing adapter is also required.

Standards: The Soldier will construct a nonelectric detonating assembly and prime a demolition block which will detonate. The Soldier will detonate the misfired charge when fired.

Appropriate _____ Not Appropriate _____

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6. Task: Establish a helicopter landing zone.

JPM: Action: Establish a helicopter landing zone.

Conditions: The Soldier will be provided equipment and munitions to clear a landing zone, smoke grenades, and colored panels.

Standards: After selecting a site which meets the listed criteria, the Soldier must have the landing zone cleared of obstacles that could damage the helicopter or could injure Soldiers on the ground. Soldiers will be positioned so as to prevent enemy penetration of the landing zone.

PERFORMANCE STEPS

4. Select site for landing zone.
1. Locate ground area to set up appropriate size landing point for each helicopter (Figure 1).

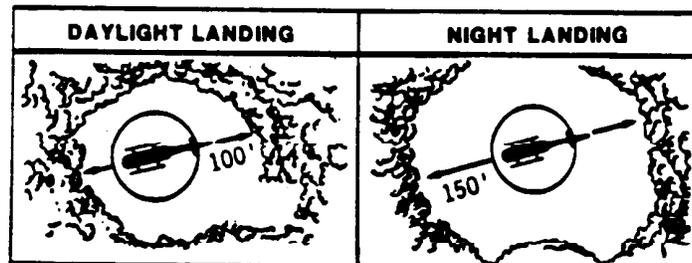


Figure 1

- a. **DAYLIGHT LANDING** - Select level area approximately 100 feet larger than diameter of aircraft rotor blades.
- b. **NIGHT LANDING** - Select level area approximately 150 feet larger than diameter of aircraft rotor blades.
- c. Use Figure 2 as a guide in selecting the appropriate size landing point.

TYPE AIRCRAFT	ROTOR BLADE LENGTH FEET	LANDING ZONE DIAMETER	
		DAYLIGHT (+100)	NIGHT (+150)
UH-1E/N	60	160	210
CH-46	85	185	235
CH-53	100	200	250

Figure 2

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2. Ensure that site is free of major obstacles which might obstruct landings or takeoffs (tall trees, telephone or power lines)

RULE: Position landing point 10 times as far from an obstacle as the obstacle is high (10:1 ratio).

EXAMPLE: A helicopter landing or taking off near a 30-foot tree needs at least 300 feet of horizontal clearance (Figure 3)

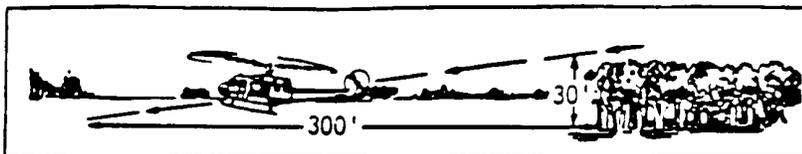


Figure 3

3. Check site for adequate approach and departure directions. Site should meet the following conditions:
- Takeoffs or landings can take place over the lowest obstacles
 - Direction is into the wind with maximum crosswinds of 10 knots and tailwinds of no more than 5 knots
4. Select ground surface with these conditions:
- Firm enough to prevent bogging down.
 - Free of heavy dust, loose snow, logs, rocks, or dry grass
5. Ensure that ground slopes do not exceed 14 percent or 8 degrees
6. Choose site that can be identified from the air
7. Check enemy position or situation to ensure that site can be secured.
8. Ensure that landing site is defensible.
- B. Secure landing zone.**
- Establish a 360-degree perimeter around landing zone
- C. Improve landing zone, if required.**
- Expend munitions to burn dry grasses, to explode mines, to trip boobytraps, and to destroy landing obstacles
 - Lower wires to the ground, and clear area of rocks, stumps, etc., over 1-foot high.
 - Remove loose debris that may damage rotor blades or engine.
- D. Mark landing zone (Figure 4).**
- Mark landing zone for daylight landing.
 - Set off smoke grenade, or use colored panels to mark landing site and to show wind direction.

CAUTION: Use smoke only as needed so as not to attract the enemy.
 - Mark immovable obstacles with colored panels or other markers.

CAUTION: Stake panels to ensure that they are not uprooted by rotor wash

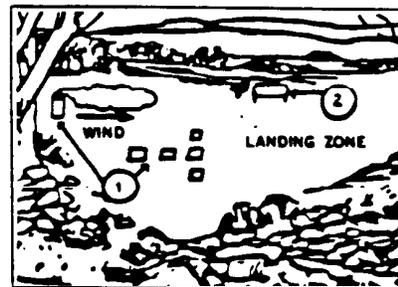


Figure 4

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2. Mark landing zone for night landing (Figure 5)

8. Position expedient lights (lanterns, flashlights, strobe lights) as follows:

NOTE: Lights at top of T must be at least five paces apart; lights in stem must be at least eight paces apart

- (1) Point beam in direction from which helicopter should approach
- (2) Position lights to show wind direction
- (a) Place blinking light farthest upwind.
- (b) Place steady lights downwind
9. Mark immovable obstacles with colored lights

CAUTION: All lights should be hooded or turned upside down until aircraft is known to be inbound.

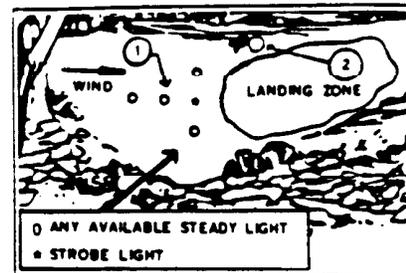


Figure 5

Appropriate _____

Not Appropriate _____

7. Task: Direct an airstrike.

JPM: Actions: The Soldier will direct a fixed-wing airstrike.

Conditions: The Soldier is given a target, an attack or fighter/attack aircraft carrying live ordnance and appropriate communication equipment, frequency, and call signs.

Standards: Ordnance must have desired effect on the target.

Appropriate _____

Not Appropriate _____

TRAINING EVALUATOR COURSE

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8. Task: Neutralize enemy mines.

JPM: Actions: The Soldier will neutralize mines.

Conditions: The Soldier is provided flag or engineer tape to mark mines, a nonmetallic probe, a 50-meter rope with grapnel, a block of C4 explosive, blasting caps, and a length of time fuze with an igniter in an area containing mines.

Standards: The Soldier will locate the mines in his area, mark their location, and use three different methods to neutralize the mines.

WARNING: Always destroy mines in place, if possible, except chemical mines which should not be destroyed in place. The majority of Soviet/ Warsaw Pact mines cannot be disarmed. Assume all mines have antihandling devices. Proceed with great caution.

1. Destroy the mine in place with explosives.

- a. Ensure that all personnel are at least 300 meters from the mine.
- b. Place a two-pound block of explosives beside the mines and detonate.

2. Remove the mine by throwing a grapnel with rope attached.

NOTE: This method is used better with tripwire and tilt-rod-fuzed mines (Figure 8).

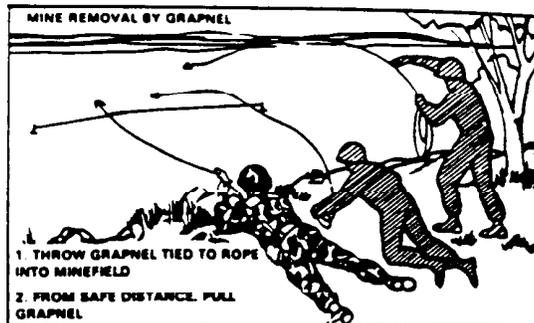


Figure 8

3. Remove the mine with rope or a wire (Figure 9).

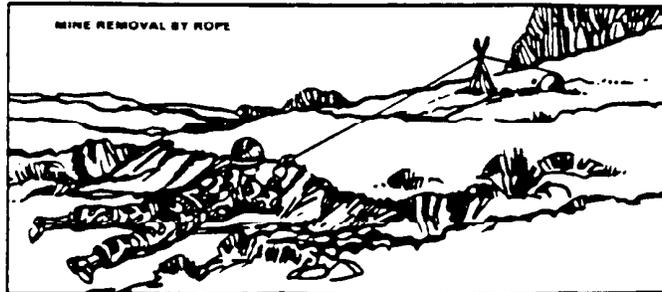


Figure 9

- a. Set up a tripod (or A-frame) with available materials.
- b. Tie a 50-foot rope to the mine.
- c. Stretch the rope across the tripod.
- d. Take cover or lie prone at least 50-meters away.
- e. Pull the opposite end of the rope so that the mine is lifted away.
- f. Wait five minutes before approaching the mine to guard against delayed firing mechanisms.

NOTE: If a mine must be removed by hand, call for Explosive Ordnance Disposal (EOD) personnel.

Appropriate _____

Not Appropriate _____

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9. Task: Detonate explosives using detonating cord.

JPM: Actions: The Soldier will detonate explosives using detonating cord.

Conditions: In a strictly controlled and supervised setting, the Soldier is provided a demolition block, detonating cord, time blasting fuze, a nonelectric blasting cap, fuze igniter, M-2 crimper, and adhesive tape or string.

Standards: The Soldier will construct a detonating cord firing system which will detonate when fired. If any simulators are used, proper assembly of the firing system is the standard.

Appropriate _____

Not Appropriate _____

10. Task: Navigate using a map and compass.

JPM: Actions: The Soldier will navigate using a map and compass.

Conditions: Conditions will be determined by the mission requirements. The Soldier will be provided a lensatic compass, a standard 1:50,000 scale military map, a starting point, and an objective.

Standard: The Soldier will navigate to a given objective in four hours.

Appropriate _____

Not Appropriate _____

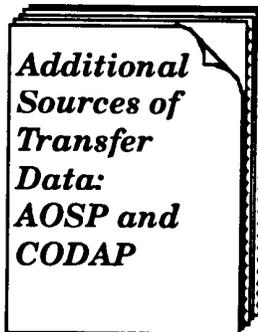
TRAINING EVALUATOR COURSE

Evaluation of Training Transfer

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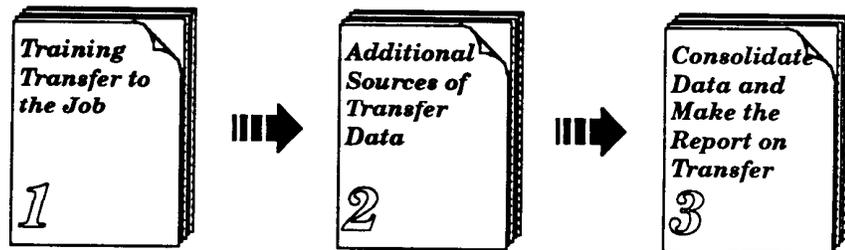
LESSON

2



*Additional Sources of
Transfer Data:
AOSP and CODAP*

MODULE 7 LESSONS



U.S. Army Training and Doctrine Command
Training Development and Analysis Directorate
Ft. Monroe, VA 23651-5000

■ **LESSON INTRODUCTION**

In this lesson we will discuss some sources of information that may help you evaluate the transfer of training to the job. These are the Army Occupational Survey Program (AOSP) and the Comprehensive Occupational Data Analysis Program (CODAP). These sources will provide some of the data DOES evaluators need to make a judgment concerning training transfer to the job, and are a valuable aid.

■ **LESSON OBJECTIVE**

The training objective for this lesson of Module 7 is shown below. This objective includes: the **action** you will be able to perform at the conclusion of this lesson, the **conditions** under which you will be able to perform this action, and the **standards** to which you will be able to perform the action.

Conditions - Given this workbook and any other references you may choose to use; and CODAP data

Action - Assess CODAP data.

Standards - You must correctly interpret the data.

■ **LESSON ACTIVITIES**

**ARMY
OCCUPATIONAL
SURVEY
PROGRAM
(AOSP)**

▼.....
The AOSP encompasses principles, operational procedures, and programmed tools for analyzing information provided by members of the occupational field being studied. The major components of the survey process include:

- Selection of occupations to be surveyed
- Development of survey instruments (questionnaires)
- Distribution of questionnaires Armywide
- Administration of questionnaires to job incumbents, supervisors, and subject matter experts (SME)
- Quality control and data reduction
- Processing of responses using a set of computer programs (CODAP)
- Analysis and reporting of occupational data
- Support to users of AOSP information

**WHY AOSP IS
USED**

▼.....
The questionnaire is an economical tool for collecting data from a large sample of soldiers Armywide. Data gathered Armywide are considered more reliable than information obtained from interviewing a limited number of job incumbents and supervisors. The information is quantifiable and verifiable. Computer programs produce reports on which the answers of selected groups can be summarized (by skill level, duty position, type of unit, etc.) and compared for analysis.

Evaluation of Training Transfer

**COMPREHEN-
SIVE
OCCUPATIONAL
DATA ANALYSIS
PROGRAM
(CODAP)**

▼.....
CODAP was selected by the Department of the Army (DA) in 1972 as the set of computer programs to be used by the AOSP. CODAP was developed by the U. S. Air Force Human Resources Laboratory at Brooks Air Force Base, TX. It is currently used by all of the U. S. Armed Forces, as well as private businesses, local governments, and academic institutions to support occupational survey and analysis efforts. CODAP generates such information as:

- Duties and tasks performed by job incumbents
- Supervisor and Subject Matter Expert (SME) ratings for critical tasks
- The importance of skills and specialized duty requirements
- Equipment usage/maintenance
- Demographic information (e.g., grade, location, type of unit)
- Job satisfaction (enlisted)
- Reenlistment and separation reasons (enlisted)
- The importance of physical requirements (enlisted)

CODAP reports are useful tools for training, manpower, and personnel management decision-making. They are most beneficial when used in conjunction with other feedback sources. In the Army, the primary uses of CODAP include:

- Analysis of training needs (POI, needs assessments, Soldiers' Manuals)
- Occupational structure revisions (ARs 611-101, 611-112, 611-201)
- Skills assessments (skill level analyses, personnel requirements for new equipment)

TRAINING EVALUATOR COURSE

Evaluation of Training Transfer

**SELECTING
SPECIALTIES/
MOS**

▼.....
AOSP survey selections are coordinated between the Deputy Chief of Staff for Personnel Integration (DCSPI) U.S. Total Army Personnel Command and TRADOC proponent schools, AHS, and other commands or agencies responsible for training. When recommending specialties/MOSs to be included in the annual Master Survey Plan, consider:

- Proposed revisions of POI, Soldiers' Manuals, and other training documents
- Newly introduced equipment
- Recent changes to job descriptions or occupational structure
- Perceived performance deficiencies
- Future requirements for critical task selection

Carefully consider when you will need the data. In general, the date needed should be a month or two prior to scheduled task selection boards or perhaps three or four months prior to contract or "drop dead" dates with HQ TRADOC. After the initial survey schedule is established, it is essential that changes in your data requirements be communicated to DCSPI.

**CRITERIA FOR
SURVEY**

▼.....
DCSPI uses the following criteria for determining which enlisted MOS will be surveyed. The MOS:

- Has been recommended for survey by a proponent or other source
- Has not been surveyed in three to four years
- Has an operating strength of 50 or more

Evaluation of Training Transfer

- Has been substantially changed since the last survey

- Is “newly” established, but has been in existence at least one year

- Is not scheduled to undergo structural change in the near future

SURVEY CYCLE

▼.....
The normal survey cycle is twelve months. You may expect to receive CODAP reports about one year from the time your item submissions are received at DCSPI. Questionnaire development/coordination takes 15 weeks. Printing requires three weeks. Distribution and administration of the survey is 26 weeks. Data reduction takes three weeks. Report generation requires two weeks. An efficient cycle will take a total of 49 weeks.

CODAP RESULTS

▼.....
Surveys generally list a long sequence of tasks and ask respondents to rate each task on a variety of factors, such as how critical it is, how frequently it is performed, and how well it is performed. The results of such surveys are of primary interest to task analysts, and these personnel are directly involved in the coordination of the surveys and use of the results. Task analysts determine the tasks to be addressed on CODAP surveys, review and maintain files of computer printouts of results, and request further analyses of the data from DCS(O as needed. These analyses are primarily descriptive breakdowns of the data according to specified criteria. For example, a listing can be provided for all tasks meeting specified levels of performance frequency and criticality for a given MOS. The results are used by task analysts and by task selection boards to select tasks for training in the institution and field units. CODAP results thus provide feedback that can be used to determine what tasks should be trained where.

CODAP PROBLEMS ▼.....
One major problem is that results are not timely. It is not uncommon for a CODAP survey addressing officers' tasks within a particular specialty to have never been conducted, or only once, several years previously. Surveys of enlisted tasks are accomplished only once every three years. Due to the rapidly changing technology of today's Army, more continuous feedback on task performance is needed.

Another concern with CODAP results has to do with their perceived validity. Subjective estimates gathered in lengthy surveys may not yield valid indicators of the importance of tasks or the proficiency with which they are performed.

A final concern with CODAP data is that they are not always available. No CODAP results are available for Reserve units, and they are badly needed. Results also are not available for low-density MOSs, and for tasks performed on equipment which has recently been introduced to the field. CODAP surveys provide an economical but not completely satisfactory way of obtaining task-specific feedback. Until the CODAP survey system can be made more flexible and timely, training developers (and more than likely, DOES evaluators) will probably rely on data gathered during field visits whenever possible.

■ **LESSON REVIEW AND SUMMARY**

During this lesson we discussed the following key points.

1. The Army Occupational Survey Program (AOSP) is a tool for analyzing information provided by members of an occupational field. The questionnaire is an economical tool for collecting data from large samples of soldiers Armywide.
2. The Comprehensive Occupational Data Analysis Program (CODAP) is the set of computer programs used by the AOSP. CODAP reports are tools for training, manpower, and personnel management decision-making.
3. The Deputy Chief of Staff for Personnel Integration (DCSPI) coordinates the Master Survey Plan for the AOSP on an annual basis.
4. There are stringent criteria for an MOS survey which are controlled by DCSPI.
5. An efficient cycle for receiving CODAP reports is 12 months from the time item submissions for the survey are received at DCSPI.
6. CODAP results are often not timely, may not be perceived as valid, and are not always available.

Evaluation of Student Learning

■ **END-OF-LESSON EXERCISE**

Using this lesson and any other references at your disposal, answer the following questions.

1. The Army Occupational Survey Program (AOSP) is a _____ process usually done for an occupational field on an Armywide sample.

2. The Comprehensive Occupational Data Analysis Program (CODAP) is a set of _____ programs used by the AOSP.

3. CODAP reports are useful tools for _____ , _____ and _____ .

4. The Deputy Chief of Staff for Personnel Integration (DCSPI) coordinates AOSP projects through the use of the _____ .

5. Place an "X" by the criteria DCSPI uses for determining enlisted MOSs that will be surveyed:
 - a. ___ Has been recommended for survey by a proponent or other source.
 - b. ___ The head of DOES at HQ TRADOC requests the MOS be surveyed.
 - c. ___ Has not been surveyed in the last two years.
 - d. ___ Has an operating strength of 49.
 - e. ___ Has been substantially changed since the last survey.

TRAINING EVALUATOR COURSE

Evaluation of Student Learning

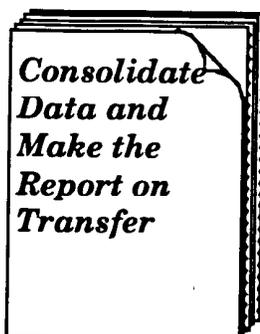
f. ____ Has been established 13 months.

g. ____ Is not scheduled to undergo structural change in the future.

6. Is the survey cycle for CODAP reports conducive to a training transfer to the job DOES evaluation? Why or Why Not?

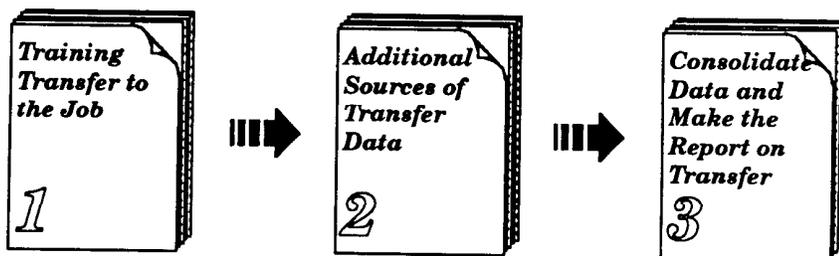
LESSON

3



*Consolidate Data and
Make the Report on
Transfer*

MODULE 7 LESSONS



■ **LESSON INTRODUCTION**

In this lesson we will discuss how to consolidate your data into a usable report.

■ **LESSON OBJECTIVE**

The training objective for this lesson of Module 7 is shown below. This objective includes: the **action** you will be able to perform at the conclusion of this lesson, the **conditions** under which you will be able to perform this action, and the **standards** to which you will be able to perform the action.

Conditions - Given the Job Aid 7e, this workbook, and any other references required; and external evaluation data (including CODAP data)

Action - Prepare an evaluation report

Standards - Report must correctly interpret results.

■ **LESSON ACTIVITIES**

CONSOLIDATE DATA ▼.....
Assuming that you, the DOES evaluator, have all your data collected, you should begin consolidating the data into a usable format. Compile separately the questionnaire inputs from graduates, questionnaire inputs from supervisors, personal interview inputs from graduates and supervisors, CODAP reports, and JPMs. Once the data has been reduced to these easier-to-handle blocks of information, begin evaluating the data by asking some pertinent questions and checking the data for answers.

QUESTION 1 ▼.....
Can the graduates perform, on the job, the tasks they were trained to perform, at the planned level of proficiency? Most likely there will be some conflicting data. For example, most graduates may say they can perform the tasks while most supervisors may say they cannot.

This may lead to other questions.

QUESTION 2 ▼.....
Precisely which tasks are not being performed satisfactorily? Look for the answer to that in the data pool. You should see definite trends.

QUESTION 3 ▼.....
What does the job performance evaluation data say about those tasks that the supervisors claim are being inadequately performed? If the JPMs were given and the evaluation was positive, there is evidence that either the JPMs or the work procedures in this command are inadequate.

Some additional questions are as follows.

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Evaluation of Training Transfer

QUESTION 4 ▼.....
Are the tasks that the supervisors think the graduates should be able to perform the same tasks that were listed on the current critical individual task list?

QUESTION 5 ▼.....
Are there tasks not selected for resident training which have not been trained on the job? Can graduates perform these nonselected tasks to standard?

QUESTION 6 ▼.....
Are there areas where there is general agreement that while graduates can score well on JPMs, they cannot do the actual task?

The above should illustrate the point that there are no hard and fast rules for evaluating the data and making recommendations for change. If most graduates and most supervisors are satisfied with the quality of training, recommend that few if any program changes be made. At the other extreme, if a representative sample of graduates and supervisors feel something went wrong between the actual training and job performance needs, the training program may be inadequate. Sift through the data to find possible causes for the inadequacy.

If numerous graduates cannot perform the tasks they were trained to perform, study the training data in relation to the other data gathered. You may want to examine graduates' scores on course tests. Did data gathered from these tests identify graduates who could not perform on the job? Were course tests and JPM the same or very similar? You might find that students who had to repeat course tests two or more times to achieve course standards were most likely to fail the JPM administered by the DOES evaluators, while students who took it only once rarely failed the JPM. In these cases, you may have to re-examine the course prerequisites and entry behaviors.

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INITIAL RECOMMENDA- TIONS

As a result of the above evaluation, one or more of the following types of recommendations for change may be made:

1. Change the instructional system.
 - a. Correct task selection discrepancies by revalidating task lists.
 - b. Correct task selection errors by reevaluating selection criteria.
 - c. Improve JPM validity.
 - d. Revise instruction to fit changes.
2. Change the job structure.
 - a. Enforce documentation; that is, if an individual is assigned to a certain job, make certain the job he is actually given matches the job description.
 - b. Provide necessary support such as tools, equipment, etc., needed to perform the job.

PROGRAM EFFECTIVENESS

At this point study the effectiveness of the program by answering the questions suggested by Lesson 1.

1. Are graduates assigned to job they were trained to do?
2. Can graduates do the job for which they were trained?

The first question finds out if the population examined was trained by your program. The second is whether your program provided training which transferred. We can also compare new and old training programs by selecting a group of subjects from the baseline study who are similar to the graduates of the instructional program being evaluated. The two groups should match each other in education, length of time elapsed since training, military experience, etc. Now, simply compare the percentages of persons in the two groups who perform satisfactorily on the JPMs. If the level of

Evaluation of Training Transfer

satisfactory performance in the baseline group is low and the graduates being evaluated perform well (for example, 40 percent success in the baseline group and 85 percent success for the graduates of the instruction being evaluated), you probably do not need to conduct statistical tests. If however, the baseline group performed well so that differences were small (for example, 75 versus 85 percent) you will want to conduct a statistical test to determine how often such a difference could be due to chance alone. You should obtain help from a research and evaluation consultant in conducting these tests.

**TRAINING
TRANSFER
REPORT**

▼.....
This report is a summary of the external evaluation procedures, findings, and interpretations for training transfer to the job. Refer to Job Aid 7d for a sample format.

■ **LESSON REVIEW AND SUMMARY**

1. A question that should be asked concerning the evaluation of training transfer to the job is: Can the graduates perform, on the job, the tasks they were trained to perform at the planned level of proficiency?
2. Data from the following sources needs to be sorted and interpreted:
 - a. Questionnaire inputs from graduates.
 - b. Questionnaire inputs from supervisors.
 - c. Personal interview inputs from graduates and supervisors.
 - d. CODAP reports.
 - e. JPMs.

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2. What is the first question on a training transfer to the job evaluation that needs to be researched?

3. What two types of recommendations are usually made?

■ **END-OF-MODULE EXERCISE**

Congratulations, you've just completed the seventh module of the Training Evaluators Course. You are now ready to complete the End-of-Module Exercise.

As we discussed in the Course Introduction, after you complete the End-of-Module Exercise, your course manager will grade it, and you will receive either a "GO" or a "NO GO" for the module. You might want to quickly review the materials in the lessons that make up this module before taking the End-of-Module Exercise.

When you are ready, take your course map to the course manager. The course manager will give you further directions for taking the End-of-Module Exercise.

Good Luck!

■ **REFERENCES AND SUGGESTED READINGS**

U. S. Army Field Manual FM 25-1: Training

U. S. Army Field Manual FM 25-100: Training the Force

TRADOC Pam 25-33: Army Training Glossary

TRADOC Pam 350-30: Interservice Procedures for
Instructional
Systems Development

U. S. Army Reg 350-1: Army Training

TRADOC Reg 350-4: The TRADOC Training Effectiveness
Analysis
(TEA) System

TRADOC Reg 350-7: Systems Approach to Training (SAT)

