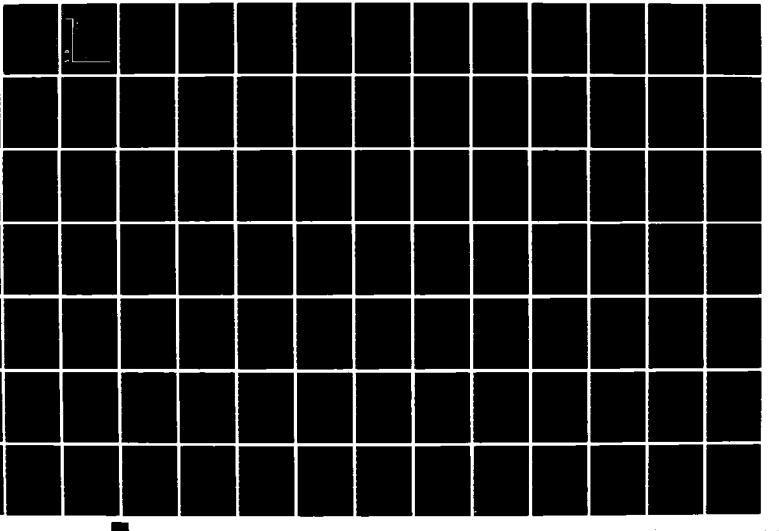
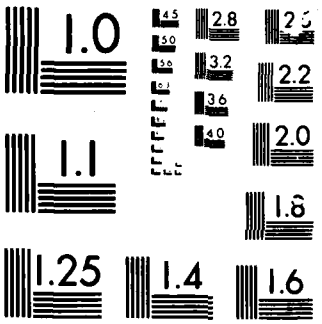
AD-A167 597 TASK EVALUATION FORM: DEVELOPMENT PROCEDURES FOR MAINTENANCE AND EQUIPMENT-ORIENTED TASKS(U) APPLIED SCIENCE ASSOCIATES INC VALENCIA PA R WARM ET AL. 1/2

UNCLASSIFIED MAY 86 AFHRL-TP-85-55 F/G 5/9 NL





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AFHRL-TP-85-55

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AIR FORCE HUMAN RESOURCES LABORATORY

AD-A167 597

TASK EVALUATION FORM: DEVELOPMENT PROCEDURES FOR MAINTENANCE AND EQUIPMENT-ORIENTED TASKS

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May 1986

Final Technical Paper for Period January - October 1985

AIR FORCE SYSTEMS COMMAND
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The Public Affairs Office has reviewed this paper, and it is releasable to the National Technical Information Service, where it will be available to the general public, including foreign nationals.

This paper has been reviewed and is approved for publication.

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AD-A167 597

Unclassified
SECURITY CLASSIFICATION OF THIS PAGE

REPORT DOCUMENTATION PAGE

1a REPORT SECURITY CLASSIFICATION Unclassified	1b RESTRICTIVE MARKINGS
2a SECURITY CLASSIFICATION AUTHORITY	3 DISTRIBUTION/AVAILABILITY OF REPORT Approved for public release; distribution unlimited.
2b DECLASSIFICATION/DOWNGRADING SCHEDULE	
4 PERFORMING ORGANIZATION REPORT NUMBER(S)	5 MONITORING ORGANIZATION REPORT NUMBER(S) AFHRL-TP-85-55
6a NAME OF PERFORMING ORGANIZATION Applied Science Associates, Inc. 6b OFFICE SYMBOL (If applicable)	7a NAME OF MONITORING ORGANIZATION Training Systems Division
6c ADDRESS (City, State, and ZIP Code) P.O. Box 158 Valencia, Pennsylvania 16059	7b ADDRESS (City, State, and ZIP Code) Air Force Human Resources Laboratory Lowry Air Force Base, Colorado 80230-5000
8a NAME OF FUNDING/SPONSORING ORGANIZATION Air Force Human Resources Laboratory 8b OFFICE SYMBOL (If applicable) HQ AFHRL	9 PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER F33615-82-C-0004
8c ADDRESS (City, State, and ZIP Code) Brooks Air Force Base, Texas 78235-5601	10 SOURCE OF FUNDING NUMBERS PROGRAM ELEMENT NO: 62205F; PROJECT NO: 1121; TASK NO: 09; WORK UNIT ACCESSION NO: 10

11 TITLE (Include Security Classification)
Task Evaluation Form: Development Procedures for Maintenance and Equipment-Oriented Tasks

12 PERSONAL AUTHOR(S)
Warm, R.; Roth, J.T.

13a TYPE OF REPORT	13b TIME COVERED	14 DATE OF REPORT (Year, Month, Day)	15 PAGE COUNT
Final	FROM Jan 85 TO Oct 85	May 1986	150

16 SUPPLEMENTARY NOTATION

17 COSATI CODES		
FIELD	GROUP	SUB-GROUP
05	09	

18 SUBJECT TERMS (Continue on reverse if necessary and identify by block number)
assessment instrument; assessment methodology; critical steps and events; evaluation area; on-the-job training (OJT); performance standards. (Continued)

19 ABSTRACT (Continue on reverse if necessary and identify by block number)

This document contains procedures for generating on-the-job training, task proficiency assessment instruments for maintenance and equipment-oriented tasks. Application of these Task Evaluation Form (TEF) development procedures to a specific task results in a TEF that can be used by an evaluator to assess a trainee's proficiency at performing that task. The TEF development procedures guide the developer in making decisions related to the evaluation of task performance. Potential performer actions and outcomes are divided into evaluation areas (time/speed, sequence-following, end product, safety, and tools, equipment, and materials use). The TEF development procedures guide the developer in determining which evaluation areas are critical to successful task performance. Every step or event in the task is considered to determine at which points each evaluation area is critical. Once critical task events or steps are identified, the developer describes exactly what performer actions and outcomes reflect successful task performance. In addition to guiding the developer in identifying and describing critical aspects of task performance, the TEF development procedures also provide instructions for creating an evaluation scenario and developing a chart for scoring task performance.

20 DISTRIBUTION/AVAILABILITY OF ABSTRACT [X] UNCLASSIFIED/UNLIMITED [ ] SAME AS RPT [ ] DTIC USERS	21 ABSTRACT SECURITY CLASSIFICATION
22a NAME OF RESPONSIBLE INDIVIDUAL Nancy A. Perrigo, Chief, STINFO Office	22b TELEPHONE (Include Area Code) (512) 536-3877 22c OFFICE SYMBOL AFHRL/TSR

DD FORM 1473, 84 MAR 83 APR edition may be used until exhausted
All other editions are obsolete

SECURITY CLASSIFICATION OF THIS PAGE
Unclassified

18 (Concluded)

task evaluation form development procedures
task performance
task proficiency

AFHRL Technical Paper 85-55 May 1986

TASK EVALUATION FORM: DEVELOPMENT PROCEDURES FOR MAINTENANCE AND EQUIPMENT-ORIENTED TASKS

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SUMMARY

The ability to accurately and objectively assess an individual's level of performance on the job is important to Air Force systems for personnel selection, assignment, training and utilization. Currently the On-the-Job Training (OJT) supervisor is responsible for the evaluation of an individual trainee's task proficiency. Concern has been expressed within the Air Force training community regarding the variability which exists among supervisors in the evaluation of OJT task proficiency. In particular, there exists a lack of standardization with regard to the development of assessment instruments, administration of performance evaluations, the scoring of results and providing feedback.

The Task Evaluation Form (TEF) development procedures were developed and evaluated by Applied Science Associates, Inc. under contract with the Air Force Human Resource Lab/ID (Contract No. F33615-82-C-0004). The TEF development procedures allow Subject-Matter Experts (SMEs), without experience or training in assessment methodology, to develop instruments which can be used to assess OJT task proficiency. SMEs apply the Task Evaluation Form development procedures to a specific task in order to generate a TEF. Evaluators then use the TEFs to conduct evaluations of OJT task performance. Potential performer actions and outcomes are divided into evaluation areas (Time/Speed, End Product Result, Sequence-Following, Safety, and Tools, Equipment, and Material Use). The TEF development procedures guide the developer in determining which evaluation areas are critical to successful task performance. The developer considers every step or event in the task to determine at which points an evaluation area should be evaluated. Once critical task events or steps have been identified for evaluation, the developer describes exactly what observable performer actions and outcomes reflect successful task performance. These descriptions are considered performance standards and are entered on the TEF. In addition to guiding the developer in identifying and describing critical aspects of task performance, the TEF development procedures also provide instructions for creating an evaluation scenario and developing a chart for scoring task performance. A task proficiency assessment instrument resulting from application of the TEF development procedures reduces evaluator subjectivity with regard to: setting up the evaluation, selecting aspects of the task for evaluation, making decisions about acceptable outcomes and behaviors, and scoring the evaluator.

The instructions contained in this document are applicable to the development of TEFs for maintenance or equipment-oriented tasks. Instructions for the development of TEFs for non-equipment-oriented tasks are provided in another document: Task Evaluation Form: Development Procedures For Non-Equipment-Oriented Tasks.

PREFACE

This technical paper was prepared by Applied Science Associates, Inc. (ASA), Valencia, Pennsylvania, under Air Force Contract Number F33615-82-C-0004. Ms. Ronnie E. Warm was the Project Scientist and Director. The project was sponsored by the Air Force Human Resources Laboratory/Training Systems Division, Lowry AFB. The Contract Monitor was Mr. Gerald S. Walker. Captain Richard Dineen was the Technical Contract Monitor until his retirement in July 1984, at which time Major Martin Costellic became the Technical Contract Monitor.

This study is one of a series of related studies under the Program: Systems Integration, Transition, and Technical Support. The objective of this program is to provide support for the Advanced On-the-Job Training System (AOTS). Task proficiency assessment instruments are necessary for assessing training on an individual and unit level within the AOTS. However, techniques for performing reliable, valid, and standardized task proficiency evaluations do not exist currently. This document is one major result of the development phase of an exploratory development study that had the purpose of deriving methodology for the development of OJT task proficiency assessment instruments. The procedures contained in this document guide Subject-Matter Experts (SMEs) in the construction of task proficiency assessment instruments. The instruments (Task Evaluation Forms) resulting from the application of the procedures can be used by On-the-Job Training (OJT) supervisors to assess trainee proficiency at specific maintenance or equipment-oriented tasks. Procedures for developing assessment instruments for non-equipment-oriented tasks will be published in another document: Task Evaluation Form: Development Procedures for Non-Equipment-Oriented Tasks.

The authors wish to acknowledge the assistance and cooperation of the many individuals who contributed to the completion of this document. From ASA, Rohn J. Hritz and George R. Purifoy, Jr. for their contributions to the initial derivation of the Task Evaluation Form (TEF) Development Procedures and for their support and ideas throughout the project; Ms. Lisa I. Thocher for her assistance in the data collection and analysis; and the Project Secretary, Mrs. Tammy Mowry. Special thanks are due to Mr. Gerald S. Walker, the Air Force Contract Monitor.

This project would not have been possible without the cooperation of all of the Air Force SMEs and project coordinators. The authors are especially grateful to the following:

Captain Richard Dineen	AFHRL/ID, Lowry AFB
MSgt Robert Aust	4235 Training Squadron, Carswell AFB
Captain Neil Breckenridge	4235 Training Squadron, Carswell AFB
TSgt Gilbert Elmy	4235 Training Squadron, Carswell AFB
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MSgt Thadous J. Magwood	HQ AFOSP, Kirtland AFB
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CMSgt David H. Smith	1606 SPG, Kirtland AFB
Captain Sherry D. Webb	HQ AFOSP, Kirtland AFB
Major Martin Costellic	AFHRL/OL-AK, Bergstrom AFB
Major Larry Johnston	AFHRL/OL-AK, Bergstrom AFB
Major Gary Martilla	CBPO, Bergstrom AFB
Colonel Charles Daye	CBPO, Bergstrom AFB

In addition, the authors wish to thank the entire Instructional Systems Team of AFHRL/OL-AK, Bergstrom AFB for their patience and cooperation in reviewing this document:

TSgt Richard L. Booth
MSgt Steven W. Dreher
MSgt Thomas D. Elliott
MSgt Harold T. Farnham
MSgt Issac T. Forbers
TSgt Erroll T. Forsman
MSgt Robert J. Haapanen
MSgt Lawrence N. Hadsell
MSgt Steven L. Hotle
MSgt Jack L. Leedom, Jr.
SMSgt Ralph Riggs
MSgt Joseph K. Singleton
TSgt Robert L. Swindell
MSgt Detles Vandermeer
MSgt Blaine M. Warden

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INTRODUCTION

Purpose of the Handbook

This handbook contains instructions for the development of a Task Evaluation Form (TEF). TEFs can be used by On-the-Job Training (OJT) supervisors to evaluate the performance of a specific task (e.g., Preflight Inspection, Liquid Oxygen [LOX] Servicing). This handbook is used by Subject Matter Experts (SMEs) to develop a TEF that can then be used by all evaluators given the responsibility to evaluate performance of that task. The TEF is used for the evaluation of task performance only and is not meant for use in evaluating systems knowledge.

The individual who develops the TEF will probably not be the same person who uses it to evaluate a task. The person using this handbook is called the TEF developer and will be responsible for using the instructions in the handbook to produce a TEF. The evaluator is responsible for using the TEF to evaluate task performance. Thus, the developer is actually providing information that will be used later by an evaluator.

The instructions contained in this handbook will guide the developer in making decisions about what performer actions and outcomes actually reflect successful task performance. Possible performer actions and outcomes are divided into five evaluation areas (time/speed, sequence-following, end product, safety, and tools, equipment, and materials use). The instructions in this handbook guide the developer in determining which areas should be evaluated during task performance. The developer considers every step or event in the task and decides at what point in the task a particular evaluation area should be evaluated. Once critical task events or steps have been identified, instructions are provided for describing successful task performance. These descriptions are considered performance standards or criteria and are entered on the TEF. (Later, the evaluator uses this information to decide whether the task has been correctly performed.)

In addition to guiding the developer in identifying and describing critical aspects of task performance, the TEF development procedures provide instructions for creating an evaluation scenario and for developing a chart for scoring task performance. The evaluation scenario and scoring chart are also entered on the TEF. The evaluator uses the evaluation scenario as instructions for setting up and conducting the evaluation. The scoring chart is also used by the evaluator to score the observed task performance.

A TEF (resulting from the application of the procedures contained in this handbook) describes the following for the evaluator:

1. How to set up the evaluation -- an evaluation scenario is described so that all supervisors evaluating the same task will conduct the evaluation in the same manner.

2. What to evaluate -- the task events or steps are designated on the TEF so that all supervisors evaluate the same aspects of task performance.

3. How to evaluate -- the scoring chart eliminates evaluator differences in scoring and assigning pass/fail decisions. A separate score is obtained for each evaluation area based on the number and type of errors that occur during task performance. Explicit criteria for assigning an overall pass/fail decision are also provided.

Examples of completed Task Evaluation Forms are included in Appendix A, along with an overview of the forms.

Who Should Use This Handbook

This handbook was designed for use by individuals given the responsibility for developing a TEF for maintenance or equipment-oriented tasks. It contains instructions applicable to tasks performed in maintenance Air Force Specialty Codes (AFSCs) and any other tasks that are primarily equipment-oriented.

An alternative handbook (AFHRL-TP-85-56, Task Evaluation Form: Development Procedures for Non-Equipment-Oriented Tasks) contains instructions for non-equipment-oriented tasks. Individuals from non-maintenance AFSCs should refer to the Non-Maintenance Handbook. However, when a TEF is being developed for an equipment-oriented task, most likely the present handbook will be applicable regardless of AFSC.

The developer should be familiar with the task for which the TEF is being developed. In addition, it is helpful if the developer has had the responsibility for training and evaluating in the OJT environment.

Why Should Task Evaluation Forms Be Used

During the Air Force training experience, an airman is trained in both job skills and knowledge. The evaluation of an airman's proficiency can be divided into two separate types of evaluation: the evaluation of job knowledge and the evaluation of job performance. Job knowledge is typically assessed through written tests. These tests are

standardized so that every airman is tested on the same subject matter, in the same way. In addition, a standardized scoring routine is used to score written tests. Thus, for written tests, test content, administration, and scoring are standardized.

This is not the case with the evaluation of job skills, which are assessed through the evaluation of task performance. Evaluation of task performance is not as standardized as is the evaluation of job knowledge. Standardization is lacking in the areas of evaluation instrument development, administration, and scoring. In other words, differences exist among supervisors regarding what is evaluated, how evaluations are conducted, and how evaluations are scored. These three areas of difference are discussed below.

What is Evaluated

Different evaluators tend to focus on different aspects of performance when assessing task proficiency. One supervisor may evaluate the performer's ability to properly use tools, equipment, or materials. Another evaluator may focus on whether the performer completes the steps in the task in a prescribed sequence. Some supervisors are influenced by factors that are related to the performer (such as neatness of dress, attitude, and motivation), while other supervisors find those types of evaluation factors less meaningful.

How is the Evaluation Conducted

In addition to focusing on different aspects of the task during the evaluation, evaluators conduct the evaluations in different ways. Some supervisors use the evaluation situation as a training experience for the performer. Supervisors have a tendency to immediately correct the performer when skill deficiencies are observed. This immediate feedback confounds the evaluation process and results, making it difficult to use the evaluation results in meaningful ways.

The evaluation situation is often used as an opportunity to test "systems knowledge" through questions to the performer. During task performance, some evaluators evaluate both knowledge and skills, while other supervisors evaluate only the performer's ability to successfully complete the task (skills).

How are the Results of the Evaluation Scored

The third area of evaluator differences is in the scoring of the results of the evaluation. There are no standard criteria to define the types and number of errors a performer is allowed to make and still be considered qualified to perform the task. Criteria for scoring an evaluation are also lacking. An evaluator has no means of arriving at

a meaningful final score for task performance. This makes it difficult to compare several different performers or to compare the same individual's performance at different points in time.

The ability to accurately and fairly assess an individual's ability to perform a task is important within the OJT system. Currently, the OJT supervisor is responsible for the evaluation of trainee's task performance.

The use of TEFs will help to ensure that all evaluators when evaluating a task, will:

1. Conduct the evaluation the same way.

2. Evaluate the same performer actions and outcomes.

3. Use the same criteria to decide whether the task was correctly performed.

4. Score task performance the same way.

Overview of the Task Evaluation Form Development Procedures

Throughout the TEF development process, instructions are provided for entering information onto worksheets. These worksheets are included as a tool for the developer. At the end of TEF development, the information from the worksheets will be transferred onto the TEF. Only the resulting TEF is used by the evaluator.

The development process is organized around the completion of nine worksheets. The handbook provides instructions for completing each worksheet as follows:

1. Worksheet 01 Defining the Task.
2. Worksheet 02 Listing the Task Steps.
3. Worksheet 03 Evaluation of Time or Speed of Task Performance.
4. Worksheet 04 Evaluation of Sequence-Following.
5. Worksheet 05 Evaluation of End Product.
6. Worksheet 06 Evaluation of Safety Procedures and Regulations.
7. Worksheet 07 Evaluation of Tools, Equipment, and Materials Use.
8. Worksheet 08 Evaluation Scenario.
9. Worksheet 09 Scoring Criteria.

Worksheets 01 and 02 describe the task that is to be performed for the evaluation. Worksheets 03 through 07 describe the aspects of task performance that should be evaluated. Worksheet 08 contains the

description of the evaluation scenario, and Worksheet 09 describes how task performance should be scored.

For each worksheet, the following general information is provided:

1. An overall explanation of the information that will be entered.

2. The purpose of the information from the evaluator's point of view.

3. Examples of completed worksheets for two tasks.

In addition, specific instructions are provided for completing each individual item on the worksheets. These instructions include directions for selecting the appropriate information and guidelines for entering that information.

Getting Started

To get started, the developer should have a specific task in mind. Once a task has been selected, the developer begins with Worksheet 01.

Blank worksheets are contained in Appendix B. Before TEF development, it will probably be necessary to make extra copies of the worksheets.

WORKSHEET 01: LISTING THE TASK STEPS

Overview

Explanation

In order to develop a TEF, a list of the steps in the task is necessary. The steps in the task are simply what someone does to perform the task. The development procedures provide instructions for the development of a TEF; they do not provide instructions for generating a list of the task steps. You are expected to obtain the list from another source and enter the steps on Worksheet 01.

Purpose

You (the developer) will refer to the task steps throughout the TEF development process. Later, you will actually be describing acceptable performance for many of the steps.

When the list is transferred to the TEF, the evaluator will use the task steps as a reference point during the actual evaluation.

Completing Worksheet 01

To complete Worksheet 01, you will:

1. List the steps on Worksheet 01.
2. Number the steps.

Examples of Worksheet 01

Examples of completed Worksheet 01 are shown in Figures 1 and 2.

Worksheet 01: Task Steps	
Task: LOX Servicing B-52H	Developer: Sample
Column A: #	Column B: Step Description
1	Review safety precautions.
2	Attach two cables from aircraft to static grounds.
3	Position fire extinguisher.
4	Disconnect electrical power to aircraft.
5	Position battery power switch to off.
6	Ensure sufficient LOX is in service cart.
7	Position LOX service cart at far limit of hose.
8	Set brakes and chock wheels of LOX cart.
9	Attach LOX cart grounding cable to static ground.
10	Ensure area around A/C vent is clean and clear.
11	Position clean metal drip pans and purge cart vent.
12	Open filler valve access door.
13	Don protective clothing.
14	Clear personnel from vent area.
15	Position vent valve handle to Fill position.
16	Ensure filler valve compartment is clean and clear.
17	Remove filler valve cap and clean filler valve.
18	Ensure cart hose nozzle and purge fittings are dry and clean.
19	Ensure capacity gage equalizer is open.
20	Build up service cart pressure to 30 $\pm$ 5 psi.

Figure 1. Example of Completed Worksheet 01: Liquid Oxygen (LOX) Servicing B-52H Aircraft.

Worksheet 01: Task Steps	
Task: LOX Servicing B-52H	Developer: Sample
Column A: #	Column B: Step Description
21	Check operation of cart relief valve.
22	Open service cart supply valve.
23	Purge supply hose.
24	Close cart supply valve and depressurize hose.
25	Connect supply hose to aircraft filter valve.
26	Open service cart supply valve and maintain 30 $\pm$ 5 psi.
27	Close service cart supply valve.
28	Disconnect supply hose from aircraft.
29	Depressurize supply hose.
30	Replace aircraft filler valve cap.
31	Position aircraft vent valve handle to build up position.
32	Close filler valve access door and secure.
33	Depressurize service cart.
34	Remove LOX cart from area.
35	Connect main external power to aircraft.
36	Check LOX quantity gage.
37	Disconnect main external power from aircraft.
38	Disconnect extra grounding cable.

Figure 1. Example of Completed Worksheet 01: LOX Servicing B-52H (Concluded)

Worksheet 01: Task Steps	
Task: Preflight KC-135A	Developer: Sample
Column A: #	Column B: Step Description
1	Test fuel quantity gages.
2	Check pitot tubes, check angle of attack, check static boom tubes.
3	Check rendezvous beacon lights for operation.
4	Check navigation lights for operation.
5	Check LOX quantity gage reading.
6	Depressurize and check hydraulic quantity gage.
7	Close circuit breakers: engine fuel flow and EPR indicators.
8	Check boom nozzle light bulb for operation.
9	Check portable fire extinguisher.
10	Check forward chinning bar safety pin installed.
11	Check portable oxygen cylinders for operation, pressure, and stowed.
12	Check nose gear inspection window.
13	Check taxi lights.
14	Check landing lights.
15	Check pilot and co-pilot windows.
16	Cargo compartment Check portable oxygen cylinders for operation, pressure, and stowed.
17	Check portable fire extinguishers properly secured.
18	Check gaseous oxygen system serviced.
19	Check main gear and flap emergency crank stowed.

Figure 2. Example of Completed Worksheet 01: Preflight Inspection KC-135A Aircraft.

Worksheet 01: Task Steps	
Task: Preflight KC-135A	Developer: Sample
Column A: #	Column B: Step Description
20	Check main gear inspection window.
21	Check escape spoiler air supply bottle properly serviced.
22	Check AIMS static system drained of moisture.
23	Check nose gear strut for proper extension.
24	Check nose gear tires.
25	Check static ports for obstruction.
26	Visually inspect lower fuselage for fuel or hydraulic leaks.
27	Inspect fuselage for accumulation of water or fuel.

Figure 2. Example of Completed Worksheet 01: Preflight KC-135A (Concluded)

Columns A and B Step Number and Description

Sources of Task Steps

Some recommended sources of task steps are:

1. Task analyses (e.g., Automated Task Analysis Authoring Aid)
2. Technical orders
3. Work cards
4. Checklists
5. OJT manuals

Criteria for Task Steps

1. Task steps should be written in the same order they are usually performed.

2. Task steps should be written in easy-to-understand terms.

3. Task steps should not be lengthy.

4. Task steps should simply describe what someone does to perform the task.

5. Task steps should not describe how someone performs the task (they should not describe standards or criteria for acceptable performance; these will be described later).

6. Task steps should be numbered so they can be referred to by number as the worksheets are completed.

7. Task steps should be in accordance with approved technical data.

Guidelines for Entering Task Steps

The task steps should be entered on Worksheet 01. Be sure to number the steps.

When one of the task documentation sources (e.g., technical orders, checklists, etc.) contains an acceptable list of task steps, you do not have to rewrite all of the steps. Instead, you should:

1. Review the documentation source.

2. Check the list, to make sure it is complete.

3. Check the list, to make sure the steps are easy to understand.

4. Make any necessary changes.

5. Number the task steps.

6. Attach the list to Worksheet 01.

CAN THE TASK BE EVALUATED BY A TASK EVALUATION FORM?

Overview

Explanation

The purpose of this discussion is to determine if the task of interest can, in fact, be evaluated by a TEF. If not, then it makes no sense to continue with the remainder of this handbook. Three evaluation methods will be discussed. If none of these methods can be used to evaluate the task of interest, then you should abandon the development of the TEF and select another task. Again, the purpose of this step is not to select the "best" method of evaluation, but simply to determine if the task of interest can be evaluated using any or all of the three methods discussed below. There is no worksheet associated with this discussion.

Discussion of Evaluation Methods

There are basically three ways to conduct an evaluation with a TEF:

1. Method 1. Use Actual Equipment in Job Environment. The operational equipment (e.g., the aircraft) can be used as it actually exists in the job environment. For example, to evaluate a preflight inspection task, an aircraft on the flightline that requires a preflight inspection can be used. The performer and evaluator would go to the aircraft and the performer would perform the preflight inspection while the evaluator observed.

This method is appropriate when the task occurs frequently in the job environment, and the evaluation of task performance does not interfere with successful completion of the task.

2. Method 2. Use "Rigged" Actual Equipment. The actual operational equipment can be "rigged" in some way to present the desired situation. For example, suppose the task occurs infrequently (too infrequently for the evaluator to wait for the task to be performed on the flightline). In this situation, it might be convenient for the evaluator to "rig" the aircraft (or operational equipment) so that the task of interest can be performed and evaluated. Some emergency tasks can be evaluated this way. This method is different than the first evaluation method even though both methods use operational equipment.

This method is appropriate when "rigging" the operational equipment will not create a hazardous situation.

3. Method 3. Use Trainer or Simulator. If the task of interest does not occur frequently in the job situation and the aircraft (operational equipment) cannot be "rigged" because "rigging" the aircraft will create a hazardous situation, then the only alternative is to evaluate the task on a simulator or trainer.

This method is appropriate when a trainer or simulator is available and the task can be presented on the trainer or simulator.

The purpose of this step in the process is to determine if any of these evaluation methods can be used. It is not to select one method, but only to assure yourself that the task of interest can be evaluated by one of the three methods.

Determining Possibility of Evaluation With a TEF

To determine if the task under consideration can be evaluated using a TEF, ask yourself the following questions:

Questions on Method 1

1. Is the task under consideration performed frequently in the job environment?

NO - Go to Method 2.

YES - Go to the next question.

2. Will the evaluation of task performance interfere with successful completion of the task?

NO - Method 1 will probably be appropriate. You will select the best method later.

YES - Go to Method 2.

Questions on Method 2

1. Is it possible to "rig" the operational equipment to present the desired task?

NO - Go to Method 3.

YES - Go to the next question.

2. Is it possible to "rig" the aircraft without creating a hazardous situation?

NO - Go to Method 3.

YES - Method 2 will probably be appropriate. You will select the best method later.

Questions on Method 3

1. Is a trainer or simulator available?

NO - It is probably not possible to evaluate the task under consideration by an over-the-shoulder evaluation. A TEF cannot be developed for this task.

YES - Go to the next question.

2. Can the task be presented on the trainer or simulator?

NO - It is probably not possible to evaluate the task under consideration by an over-the-shoulder evaluation. A TEF cannot be developed for this task.

YES - Method 3 will probably be appropriate. You will select the best method later.

Based on your answers to the questions, make a decision about the possibility of evaluating the task with a TEF. In general, if the task is performed frequently in the job environment, there will be no problem. However, if the task occurs infrequently, the equipment cannot be "rigged," and a trainer is not available, then it is probably not worthwhile to continue with the rest of the TEF development procedures.

If your decision is that the task cannot be evaluated by any of the three methods, then record a note on worksheet 01. You should simply state, "This task cannot be evaluated by any of the three over-the-shoulder evaluation methods." You should select another task.

If your decision is that the task can be evaluated, go to Worksheet 02, and a specific method of evaluation will be selected later. You cannot select a specific method now, since you need more information about what should be evaluated during task performance.

WORKSHEET 02: DEFINING THE TASK

Overview

Explanation

The first step in TEF development is to define the particular task for which the form is being developed. Individual TEFs will probably be developed for many tasks. Therefore, a description of the task that should be evaluated with the TEF you are about to develop is necessary. The task title may not provide enough information to completely identify the task to be evaluated. You will identify exactly what steps or events should be considered part of the task for evaluation purposes. In addition, when there are multiple performers, you will specify which performer should be evaluated with this TEF.

Purpose

In order to conduct fair evaluations, it is important that all evaluators have the same idea about what is to be included in the evaluation. Worksheet 02 outlines the task to be evaluated. The information on this worksheet tells the evaluator exactly what steps or parts of the overall task should be included in the evaluation; i.e., what steps in the task the performer is responsible for.

Completing Worksheet 02

In order to complete Worksheet 02, you will enter the following information:

1. Line A AFSC/Duty Position or Work Center.
2. Line B Task Title.
3. Line C Task Beginning.
4. Line D Task End.
5. Block E Steps or Events not Included in the Evaluation.
6. Block F Source Title and Identification.

Examples of Worksheet 02

Examples of completed worksheets are shown in Figures 3 and 4.

Worksheet 02: Task Definition

Task: LOX Servicing B-52H Developer: Sample

Line A AFSC/Duty Position: 431X2/

Line B Task Title: LOX Servicing B-52H

Line C Task Beginning: As performer positions fire extinguisher

Line D Task End: After extra grounding cable is disconnected

Block E Steps or Events not Included in the Evaluation

Step 1, Step 2, annotating AFTO forms

Block F Task Information Sources

Title	Date
Technical Orders 1B-52H-2-2JG-1, 3	10/82
OJT Instructors Guide No. 8506	11/82

Figure 3. Example of Completed Worksheet 02: LOX Servicing B-52H.

Worksheet 02: Task Definition

Task: Preflight KC-135A Developer: Sample

Line A AFSC/Duty Position: 431X2/

Line B Task Title: Preflight KC-135A

Line C Task Beginning: Beginning of Work Card 1-003

Line D Task End: End of Work Card 1-010

Block E Steps or Events not Included in the Evaluation

Work Card 08

Discrepancies found and servicing necessary will only be annotated (i.e., LOX servicing, fire extinguisher servicing)

Task Information Sources

Title	Date
[illegible] A-2-9JG-3	3/82
[illegible] No. 8101	1/82

Figure 4. Example of [illegible] preflight [illegible]

Line A AFSC/Duty Position or Work Center

Explanation

On Line A you will enter the AFSC and duty position or work center for which the TEF is being developed.

Purpose

The AFSC provides general information regarding who should be evaluated. The duty position or work center further defines the performer's role for the evaluator. This is especially important when the task is a team task or when several people perform different parts of the task. This information tells the evaluator which member of the team should be evaluated with this particular TEF.

Guidelines for Entering AFSC and Duty Position

Simply enter the AFSC and duty position or work center in Block A. You do not have to include a work center or duty position for every task. You should include either the duty position or work center for tasks that usually require more than one person for completion.

Some examples of duty positions are:

1. Task supervisor
2. Crew chief
3. Operator
4. Servicing unit monitor
5. Aircraft systems gage monitor
6. Team chief

Line B Task Title

Explanation

On Line B you will enter the title of the task, including the weapon system when applicable.

Purpose

When the evaluator is ready to evaluate the performance of a particular task, the appropriate TEF can be found by checking the title.

Guidelines for Entering Task Title

Enter the task title in Block B. Be sure to include the weapon system or name of the operational equipment (when applicable).

Some examples of task titles are shown below:

1. Drag Chute Installation - B-52H
2. Preflight - KC-135A
3. LOX Servicing - B-52H
4. Starter Cartridge Remove - KC-135A

Line C Task Beginning

Explanation

The task beginning is the exact point at which the evaluation of task performance begins. For instance, if the task to be evaluated requires a lengthy set-up procedure and the set-up procedure is considered a whole different task, then the evaluation would begin after the set-up procedure had been completed.

Purpose

The information on Line C will tell the evaluator when to begin the evaluation.

Guidelines for Entering Task Beginning

Enter the task beginning in Block C of Worksheet 02.

You can enter a task step number or a performer action or event which the evaluator can observe.

Some examples of acceptable entries are shown below:

1. As the performer positions B-4 stand.
2. Step 3.
3. Step 1.
4. After the LOX cart is set-up.
5. As the performer positions the fire extinguisher.
6. As the performer opens the access doors.
7. As the performer receives clearance.

Line D Task End

Explanation

The task end is the exact point at which the evaluation of task performance ends.

Purpose

The information on Line D tells the evaluator when to end the evaluation.

Guidelines for Entering Task End

Enter the task end in Block D.

You can enter a step number or a performer action or event that the evaluator can observe.

Some examples of acceptable entries are shown below:

1. After B-4 stand is removed.
2. When Step 30 is completed.
3. When Step 25f is completed.
4. After external electric power is disconnected.
5. After the master refuel switch is positioned to off.
6. After access doors are closed.

Block E Steps or Events Not Included in the Evaluation

Explanation

There are times when the performance of the task of interest may overlap into the performance of other tasks, or someone other than the performer may be responsible for certain parts of the task. When this occurs, the performer should not be evaluated on these parts of the task. For example, during a preflight inspection, the performer will service the LOX if it is needed. However, if you were developing a TEF for the preflight, you might want to exclude servicing the LOX, since this is a separate task. In that case, the preflight performer should be evaluated only on checking the LOX and recording any abnormalities. You would instruct the evaluator not to evaluate LOX servicing while evaluating a preflight inspection.

Purpose

Block E describes for the evaluator the parts of the task that the performer is not responsible for. This tells the evaluator not to evaluate the performer on these parts.

Finding Steps or Events Which Should Not Be Evaluated

Think about the task, and ask yourself the following questions:

1. Are there any parts of the task for which the performer should not be responsible?

2. Are there any parts of the task that should be performed by someone else (e.g., by the evaluator or another member of the team)?

3. Are there any parts of the task that are really another task?

4. Are there any parts of the task that should be evaluated by a different TEF?

Guidelines for Entering Steps or Events Which Should Not Be Evaluated

Enter the steps or events that should not be evaluated in Block E. You should make your entries by step number or by describing the events.

Some examples of steps or events that should not be evaluated (from several tasks) are shown below:

1. Placing the generator on line.
2. Grounding the aircraft.
3. Any servicing.
4. Wing walker duties.
5. Brake rider duties.
6. Fire guard duties.
7. Ground observer duties.
8. Steps 1 through 4.
9. Steps 7, 10, and 11.

Block F Source Title and Identification

Explanation

In Block F, you should list any task information sources you plan to use to develop the TEF.

Purpose

The evaluator can check your sources to make sure they are up to date.

Selecting Task Information Sources

Now that you have defined the task, you should select any relevant information about the task. You will be using this task information as a reference or documentation source during the development of the TEF. The task information should be up to date and include the following:

1. Task steps and sequences of steps.
2. Tools, equipment, and materials used.
3. Applicable procedures and regulations.

Some relevant sources of task information to consider are:

1. Technical orders.
2. Technical manuals.
3. OJT manuals.
4. Occupational survey data.
5. Logistical support analysis data.

Review all of the available information sources and decide which sources provide the most complete information. Select the task information sources that you will use to develop the TEF.

Guidelines for Entering Task Information Sources

Enter the titles and the date of your sources in Block F. (If you are entering technical orders, write the date of the latest change.)

YOU ARE NOW READY TO GO ON TO WORKSHEET 03.

WORKSHEET 03: EVALUATION OF TIME OR SPEED OF TASK PERFORMANCE

Overview

Explanation

The evaluation of time or speed of task performance is the evaluation of the amount of time the performer is allowed to complete a task or part of a task. One of the indications of successful task performance may be whether the performer completes the task or part of a task within a specified time period.

Purpose

The information you enter on Worksheet 03 will describe for the evaluator:

1. Exactly when in the task the time or speed of task performance should be evaluated.

2. The amount of time which is acceptable.

The evaluator uses this information to decide whether the task or parts of the task were performed in the correct amount of time.

Completing Worksheet 03

In order to complete Worksheet 03, you will enter the following information:

1. Column A Critical Segments.
2. Column B Starting Point.
3. Column C Stopping Point.
4. Column D Standard.

Examples of Worksheet 03

See Figures 5 and 6 for examples of completed Worksheet 03.

Worksheet 03: Evaluation of Time or Speed of Task Performance

Task: LOX Servicing B-52H Developer: Sample

Column A Critical Segments	Block B Starting Point	Block C Stopping Point	Block D Standard
26 - 27	Service cart supply valve is opened	Service cart supply valve is closed	At least 30 seconds

Figure 5. Example of Completed Worksheet 03: LOX Servicing B-52H.

Worksheet 03: Evaluation of Time or Speed of Task Performance

Task: Preflight KC-135A Developer: Sample

Column A Critical Segments	Block B Starting Point	Block C Stopping Point	Block D Standard
N/A			

Figure 6. Example of Completed Worksheet 03: Preflight KC-135A.

Column A Critical Segments

Explanation

In Column A, you should enter the critical segments. The critical segments are those steps or series of steps in the task where the time or speed of task performance should be evaluated.

Purpose

The list of critical segments tells the evaluator when to evaluate the time or speed of performance.

Finding Critical Segments

Time or speed of performance can be evaluated for:

1. A step in the task.

2. A series of steps in the task.

3. The whole task.

Time or speed of performance may not be applicable to the task under consideration.

You should decide, by using the criticality questions included in this section, where in the task time or speed of performance should be evaluated. You should go through each step in the task and ask yourself, "Will any of the following occur if this step or series of steps is not performed within some time period?"

1. Injury to personnel.

2. Damage or loss of equipment or resources.

3. Performer required to redo the task or part of the task.

4. Co-worker (working with the performer on the same task) delayed in initiating or completing a task segment.

REMEMBER THAT TIME OR SPEED OF PERFORMANCE SHOULD ONLY BE EVALUATED WHEN IT IS CRITICAL ACCORDING TO THE CRITICALITY QUESTIONS.

Guidelines for Entering Critical Segments

The critical segments should be entered in Column A of Worksheet 03. Use the appropriate guideline from the list below.

1. If time or speed of performance is not applicable to the task, enter N/A in Column A. Go on to Worksheet 04.

2. If time or speed of performance should be evaluated for a step, enter the step number (e.g., 3, 5, 7, 9).

3. If time or speed of performance should be evaluated for a series of steps, enter the first step number through the last step number (e.g., 2 through 6, 8 through 11).

4. If time or speed of performance should be evaluated for the whole task, enter the first step number through the last step number (e.g., 1 through 36, 1 through 29).

Column B Starting Point

Explanation

The starting point is the exact point at which the evaluator should begin timing performance. A starting point should be described for every critical segment listed in Column A.

Purpose

The starting point tells the evaluator exactly when to begin timing the performer. In order to conduct fair and accurate evaluations, it is important that all evaluators who use the TEF begin timing performance at the same point in the task.

Guidelines for Entering Starting Point

Your description of the starting point should be entered in Column B of Worksheet 03.

1. You should describe the event or performer action that would signal the evaluator to start timing task performance. The event or performer action which you describe must be clearly observable to the evaluator.

2. Your description should be brief, but provide enough information so that the evaluator knows when to start measuring time.

3. You may want to start your description with one of the following phrases:

a. Begin when.

b. Begin as.

c. Begin after.

REMEMBER, YOUR DESCRIPTION SHOULD TELL THE EVALUATOR EXACTLY WHEN TO BEGIN TIMING PERFORMANCE.

Some examples of acceptable entries from various tasks are:

1. Begin when performer opens supply valve.
2. Begin when performer grasps vent valve handle.
3. Begin as LOX stream begins to flow.

Column C Stopping Point

Explanation

The stopping point is the exact point at which the evaluator should stop timing performance. A stopping point should be described for each critical segment listed in Column A.

Purpose

The stopping point tells the evaluator exactly when to stop timing the performer. In order to conduct fair and accurate evaluations, it is important that all evaluators using the TEF stop timing performance at the same point in the task.

Guidelines for Entering Stopping Point

The stopping point should be entered in Column C of Worksheet 03.

1. You should describe the event or performer action that would signal the evaluator to stop timing performance. The event or performer action you describe should be clearly observable to the evaluator.

2. Your description should be brief, but should provide enough information so that the evaluator knows when to stop measuring time.

3. You may want to start your description with one of the following phrases:

a. Stop when.

b. Stop as.

c. Stop after.

REMEMBER, YOUR DESCRIPTION SHOULD TELL THE EVALUATOR EXACTLY WHEN TO STOP TIMING PERFORMANCE.

Some examples of stopping points from various tasks are:

1. Stop when supply valve is closed.

2. Stop when vent valve handle is in build-up position.

3. Stop after LOX stream is discontinued.

Column D Standard

Explanation

The standard is the amount of time that is acceptable to perform each critical segment. A standard should be entered for each critical segment listed in Column A.

Purpose

The evaluator will use the standard to decide whether the critical segment was performed in an acceptable amount of time.

Guidelines for Entering Standard

Enter the standard in Column D of the Worksheet.

Standards can be written in several different formats. Select the best format and fill in the appropriate numbers.

1. As a single value (e.g., 10 minutes, 15 minutes).

2. As a range of time. When you specify a range of time, this means the time for performance must fall within that range (e.g., 10 to 12 minutes, 15 to 20 minutes).

3. As a minimum amount of time (e.g., at least 10 minutes, at least 20 minutes).

4. As a maximum amount of time (e.g., no more than 10 minutes, no more than 20 minutes).

YOU ARE NOW READY TO GO TO WORKSHEET 04.

WORKSHEET 04: EVALUATION OF SEQUENCE-FOLLOWING

Overview

Explanation

The evaluation of sequence-following is the evaluation of the order of task performance. Specifically, the evaluation of sequence-following involves the order in which the steps in the task are performed. Sometimes, it may be important to perform a step or a sequence of steps only after another step is performed. Successful task performance could be prevented if the performer does not follow a prescribed order.

Purpose

The information from Worksheet 04 describes for the evaluator the order in which the steps in the task should be performed. The evaluator uses this information to decide whether the steps were performed in the correct order.

Completing Worksheet 04

To complete Worksheet 04, you will enter:

Block A: Series of steps in the task that must be performed in order.

Block B: Single steps in the task that must be performed before other steps.

Examples of Worksheet 04

See Figures 7 and 8 for completed examples of Worksheet 04.

Worksheet 04: Evaluation of Sequence-Following

Task: LOX Servicing B-52H Developer: Sample

Block A Series of Steps

Step 3 through 38

Step ____ through ____

Step ____ through ____

Step ____ through ____

Step ____ through ____

Block B Single Steps N/A

Step ____ before Step(s) _____

Step ____ before Step(s) _____

Step ____ before Step(s) _____

Step ____ before Step(s) _____

Step ____ before Step(s) _____

Figure 7. Example of Completed Worksheet 04: LOX Servicing B-52H.

Worksheet 04: Evaluation of Sequence-Following

Task: Preflight KC-135A Developer: Sample

Block A Series of Steps N/A

Step ____ through ____

Step ____ through ____

Step ____ through ____

Step ____ through ____

Step ____ through ____

Block B Single Steps N/A

Step 1 before Step(s) 23

Step ____ before Step(s) _____

Step ____ before Step(s) _____

Step ____ before Step(s) _____

Step ____ before Step(s) _____

Figure 8. Example of Completed Worksheet 04: Preflight KC-135A.

Block A Series of Steps

Explanation

In Block A you should enter any series of steps that must be performed entirely in order. (A series of steps is three or more steps that must be performed in order.)

Purpose

The evaluator will use this information to decide whether the steps of the task were performed in order.

Finding Critical Series

Sequence-following is rarely critical to evaluate for every step in the task. Many task reference sources indicate that the entire task must be performed in a prescribed sequence. However, quite often sequence-following should only be evaluated for certain series of steps in the task.

You should use the criticality questions to decide when sequence-following should be evaluated. Go through the task and ask yourself, "Will any of the following occur if certain series of steps in the task are not performed in a specified order?"

1. Injury to personnel.

2. Damage or loss to equipment or resources.

3. Performer required to redo the task or part of the task.

4. Co-worker (working with the performer on the same task) delayed in initiating or completing a task segment.

REMEMBER, SEQUENCE-FOLLOWING SHOULD ONLY BE EVALUATED WHEN IT IS CRITICAL ACCORDING TO THE CRITICALITY QUESTIONS.

Guidelines for Entering Series of Steps

Enter the series of steps that must be performed in order in Block A of Worksheet 04.

1. If you have no entries, write N/A in Block A and go on to Block B.

2. You should enter the first step number through the last step number (e.g., 1 through 7, 10 through 12).

Block B Single Steps

Explanation

Block B is used when a single step must be performed before other steps later on in the task.

Purpose

The evaluator will use this information, along with the series of steps you have already entered, to decide whether the steps of the task were performed in order.

Finding Critical Single Steps

Once again, you should use the criticality questions to decide which steps should be performed before other steps later in the task. You should go through the task and ask yourself, "Will any of the following occur if this step is not performed before other steps later in the task?"

1. Injury to personnel.

2. Damage or loss to equipment or resources.

3. Performer required to redo the task or part of the task.

4. Co-worker (working with the performer on the same task) delayed in initiating or completing a task segment.

REMEMBER THAT THE ORDER OF TASK PERFORMANCE SHOULD ONLY BE EVALUATED WHEN IT IS CRITICAL ACCORDING TO THE CRITICALITY QUESTIONS.

Guidelines for Entering Single Steps

In Block B, enter the single steps that must be performed before other steps in the task.

1. If you have no entries for Block B, enter N/A.

2. You should enter the single step number and the numbers of the steps it should be performed before, in the following format:

   a. Step 3 before Step 9.
   b. Step 3 before Steps 9 and 10.
   c. Step 3 before Steps 9, 10, and 22.
   d. Step 3 before Steps 9 through 12.

3. Be sure to include all of the steps that must be performed after the single step.

YOU HAVE COMPLETED WORKSHEET 04. YOU ARE NOW READY TO GO ON TO WORKSHEET 05.

WORKSHEET 05: EVALUATION OF END PRODUCTS

Overview

Explanation

One of the most obvious ways to evaluate a performer is to examine the task outcome or the results of task performance. The task end product is the outcome or result that the task is aimed at producing. It can usually be observed or measured when the task is complete. Evaluation of End Products is the evaluation of the outcome or result of task performance.

Purpose

The information from Worksheet 05 describes for the evaluator:

1. Which end products or parts of end products should be evaluated.

2. How these end products should be evaluated.

3. When in the task the end products should be evaluated.

The evaluator uses this information to decide whether or not the outcome of task performance is acceptable.

Completing Worksheet 05

The following information will be entered on Worksheet 05:

1. Column A - List of end products and/or components of end products.

2. Column B - Criteria for evaluating end products.

3. Column C - Steps associated with the generation of end products.

Examples of Worksheet 05

Completed examples of Worksheet 05 can be found in Figures 9 and 10.

Worksheet 05: Evaluation of End Product

Task: LOX Servicing B-52H Developer: Sample

Column A End Products	Column B Criteria	Column C Step
Filler valve cap	Replaced	30
Filler valve access door	Closed and secure	32
LOX cart	At least 50 ft. from aircraft	34
LOX quantity gage	Reads full	36

Figure 9. Example of Completed Worksheet 05: LOX Servicing B-52H.

Worksheet 05: *Evaluation of End Product*

Task: Preflight KC-135A Page 1 of 5 Developer: Sample

Column A End Products	Column B Criteria	Column C Step
Fuel quantity gages	Within safe limit	1
Pitot tubes Angle of attack Static boom tubes	Operational	2
	Not clogged	
Beacon lights	Operational	3
Navigation lights	Operational	4
LOX quantity gage	Reads at least 6 liters	5
Hydraulic quantity gage	Reads at least 4.5 gallons	6

Figure 10. Example of Completed Worksheet 05: Preflight KC-135A.

Worksheet 05: Evaluation of End Product

Task: Preflight KC-135A Page 2 of 5 Developer: Sample

Column A End Products	Column B Criteria	Column C Step
Engine fuel flow C.B.	Closed	7
Engine EPR C. B.		
Boom nozzle light bulb	Operational	8
Fire extinguisher	Properly serviced	9
Forward chinning bar pin	Installed	10
Portable oxygen cylinders	Regulators operational	11
	Stowed	
	Pressure 280 psi minimum	
Nose gear inspection window	Clean	12

Figure 10. Example of Completed Worksheet 05: Preflight KC-135A (Continued)

Worksheet 05: Evaluation of End Product

Task: Preflight KC-135A Page 3 of 5 Developer: Sample

Column A End Products	Column B Criteria	Column C Step
Taxi lights	Operational	13
Landing lights	Operational	14
Pilot and co-pilot windows	Clean	15
Cargo compartment:	Regulators operational	16
Portable oxygen cylinders	Stowed	
	Pressure 280 psi minimum	
Portable fire extinguisher	Stowed	17
	Properly serviced	
Gaseous oxygen	400 - 425 psi	18

Figure 10. Example of Completed Worksheet 05: Preflight KC-135A (Continued)

Worksheet 05: *Evaluation of End Product*

Task: Preflight KC-135A Page 4 of 5 Developer: Sample

Column A End Products	Column B Criteria	Column C Step
Main gear and flap emerg. crank	Stowed	19
Main gear inspection window	Clean	20
Escape spoiler air supply	Properly serviced	21
AIMS static system	No moisture in trap	22
Nose gear strut	Proper extension	23
Nose gear tires	Proper inflation	24
	No evidence of wear and damage	

Figure 10. Example of Completed Worksheet 05: Preflight KC-135A (Continued)

Worksheet 05: Evaluation of End Product

Task: Preflight KC-135A Page 5 of 5 Developer: Sample

Column A End Products	Column B Criteria	Column C Step
Static ports	Clean and unobstructed	25
Lower fuselage	No fuel or hydraulic leaks	26
Fuselage	No accumulation of water or fuel beyond allowed limit	27

Figure 10. Example of Completed Worksheet 05: Preflight KC-135A (Concluded)

Column A End Products

Explanation

The end products or parts of end products of task performance will be listed in Column A of Worksheet 05. Instructions will be given for distinguishing between end products of task performance and end products of individual steps in the task.

Purpose

The list of end products in Column A tells the evaluator which end products should be evaluated. During task performance, the evaluator will look for the generation of those end products.

Finding Task End Products

End products of task performance can be generated in several different ways, depending on the task of interest. The most common ways that end products are generated are as follows:

1. One end product can be generated at the end of task performance. For instance, the main end product of the LOX servicing task is that the LOX quantity gages read full.

2. An end product can have several different parts or components. These parts or components may be generated at different steps in the task. For instance, the end product of the drag chute installation task is that the drag chute meets certain criteria and is installed properly. However, different aspects of proper installation are completed at different steps in the task.

3. A task can have several different end products. In addition, some of these end products may have several parts or components. The end products and their parts or components may be generated at different steps in the task. For instance, the preflight task has many end products. This is true of most tasks which involve inspection or cleaning.

You should use the information you already have about the task to find the task end products. Some information you may find useful is described below.

Task Objective. Ask yourself, "What is the purpose of this task; what is the task aimed at producing or accomplishing?" The answer to this question may be a task end product.

Task Title. The title of the task may provide information about the end product of task performance. The outcome or end product of task performance may be referred to in the task title.

Step Descriptions. The words in the individual step descriptions may indicate that a task end product is generated at that step. Look for words like check, clean, ensure, or inspect. These words often indicate the generation of task end products.

Safety Procedures. Task end products can be generated when certain steps or events in the task are performed for later safe operation of the equipment. (Task end products are usually not generated when a step or event is performed solely for safety during task performance. This type of safety procedure will be included on Worksheet 06.) Examine the steps of the task that are performed for safety following task performance. These safety events may result in the generation of important task end products.

Task Outcome. The outcome of task performance, which can be observed after the task is completed, is often the main task end product.

Now you should think about the end products of the task.

Qualifying as Task End Products

In order to qualify as task end products, the end products must meet several qualifications.

First of all, the end products must be observable and measurable by the evaluator. The evaluator must be able to see the end product at some time during task performance or when the task is complete.

In addition, end products must be task end products and not simply products of the step at which they were generated. Avoid confusing the end product of the task with the product of individual steps in the task. There are times when a task end product is generated at almost every step in the task. This is particularly true for tasks involving inspection or cleaning. However, many tasks have only one end product, which is usually generated towards the end of the task.

Some tasks have only one end product with several different "parts." These "parts" may be generated at different points in the task. For instance, in the drag chute installation example included in this handbook, "Drag Chute Installed" is the overall end product of task performance. However, the precise dimensions and orientation of the drag chute within the compartment are generated early in the task. Since the dimensions and orientation of the drag chute are critical to successful task performance, these items are considered parts of the overall task end product.

On the other hand, if a task involved opening a valve, draining fluid from a tank, and then resealing the valve, one step of that task might result in an open valve. However, the task end product would be that the tank was drained and the valve was resealed.

You must decide whether the end products you are considering are task end products or simply products of the step at which they occur. Only end products of the task should be evaluated.

One way to distinguish between step and task end products is to ask yourself: "WILL THE STATUS AND/OR FEATURES OF THE END PRODUCT GENERATED AT THIS STEP REMAIN THE SAME AT THE END OF THE TASK?" If your answer is "yes," then the product you are considering is probably a task end product.

Based on these qualifications, you should decide which end products or parts of end products should be evaluated.

Guidelines for Entering End Products

Enter the end products or parts of end products in Column A of Worksheet 05. Almost every task should have at least one end product.

Column B Criteria

Explanation

In Column B you will describe how the end products should be evaluated. Every end product must meet certain criteria in order to be acceptable. For each end product, you will describe those criteria.

Purpose

The evaluator will use the listed criteria to tell the difference between an acceptable and a unacceptable end product. In order to conduct fair and accurate evaluations, it is important that all evaluators evaluate the end products according to the same criteria.

Finding Criteria

The evaluator will need to know criteria for evaluation. When the end product must meet certain criteria, you should describe those criteria.

For each end product listed, ask yourself, "Will any of the following occur if this end product does not meet certain criteria?"

1. Injury to personnel.

2. Damage to equipment or resources.

3. Performer required to redo the task or part of the task.

4. Co-worker (working with the performer on the same task) delayed in initiating or completing a task segment.

Some types of criteria you may want to consider are as follows:

1. Function. One way to evaluate an end product is to see if it works (functions). For example, if the task is to assemble a component, one way to tell if it is properly assembled is to see if it works.

2. Dimensions. Some end products have physical dimensions that are important (e.g., circumference, length, width, height, volume, weight). For example, if an end product is to have a certain width, then width may be an important feature to measure.

3. Other physical criteria. Physical criteria include color, texture, consistency, smoothness, etc. For example, if an end product is to have a certain color, then color may be a worthwhile measure to consider.

4. Accuracy and precision. If the task is firing a weapon at a target, then it might be important to measure the accuracy and precision of the performer by examining the target. Accuracy is also important to evaluate when transmittal of information (written or verbal) is the desired result.

5. Status. Some end products must be in a specific state or condition to be acceptable. For example, it might be important for certain switches to be in the on or off position.

6. Location. To be acceptable, end products frequently must be in specific locations. For example, an item of equipment might be stowed in a particular place.

7. Orientation. Some end products must be oriented in a certain fashion (in a certain relationship with other components). For example, an equipment item might need to be in an upright position or a certain distance from another piece of equipment.

You should decide what type of criteria should be evaluated for each end product.

REMEMBER, ONLY CRITERIA THAT ARE CRITICAL ACCORDING TO THE CRITICALITY QUESTIONS SHOULD BE EVALUATED.

Describing Criteria

You should describe at least one type of criteria for each end-product or part listed in Column A. When describing criteria for:

1. Parts of end products: describe one or more types of criteria for each part or component as applicable.

2. One end product: describe one or more types of criteria for the end product. If you have only one end product, it will probably be necessary to describe several types of criteria (e.g., location, dimension, function).

3. Multiple end products: describe one or more types of criteria for each end product as applicable.

When more than one type of criteria will be described for a particular end product (e.g., location, dimension), these criteria should be listed in separate lines of the worksheet. This will make it easier when you assign point values to each type of criteria later on in the TEF development procedures.

Guidelines for Entering Criteria

The criteria should be entered in Column B, next to the applicable end product.

1. Be sure to include criteria for each end product or part.

2. Your descriptions should be written in terms the evaluator can easily understand.

3. Be specific.

4. List different types of criteria for the same end product on separate lines of the worksheet.

REMEMBER, THE EVALUATOR WILL USE THESE DESCRIPTIONS TO DISTINGUISH BETWEEN AN ACCEPTABLE AND AN UNACCEPTABLE END PRODUCT.

Some examples of end products with criteria (from various tasks) are shown below:

Drag Chute Installation B-52D

Drag Chute Control Handle	Operational, moves freely
√ Drag Chute	No oil or moisture
	Dimensions: 15.75 inches high, 21.50 inches wide, and 36.50 inches long
	Installed in compartment.
√ Riser Terminal	Secured and locked in jettison jaws.
√ Risers and Ripcord	Pushed up and out of way.
√ Ripcord	Ball terminal of ripcord is in terminal fitting.
Drag Chute Door	Up and locked. Red indicator is in flush with aircraft skin.
Crank Handle	Stowed in gunners section.

Starter Cartridge Removal KC-135A

Starter Cartridge	Removed.
√ Breech Cap	Inside clean and clear.
√ Secondary Air Inlet Screen	Clean and clear.
√ Blowout Plug	Clean and clear.
√ Locking Lugs	Clean and clear.
√ Firing Pin	Clean and clear.
√ Breech Lock, Electrical Outlet	Clean and clear.
√ Seats	Clean and clear.
Breech Cap	Stored in plastic bag with silica gel.

Oil Servicing FB-111A

Filler Cap Dipstick	Area clean.
	Installed, locking lugs engaged.
Oil	Serviced to specs.
Access Doors	Closed and aligned.

Water Servicing to FB-111A

Water Tank	Full.
Water Tank Cap	Installed securely.

*Note that for some end products, more than one type of criteria have been specified.

Column C Steps

Explanation

Most end products are associated with a particular step in the task. There are times when task end products are actually generated prior to the end of the task. When this occurs, you should determine which step is associated with each end product. In addition, certain end products cannot be easily observed and evaluated when the task is complete. You will identify those end products for the evaluator.

Purpose

This information will tell the evaluator when to watch for the generation of end products.

Finding Steps

Think about the end products you have listed. Decide which step is associated with each end product.

You should also decide which end products cannot be evaluated when the task is complete. Some examples of end products that must be evaluated during task performance are indicated by checks (✓) in the previous examples.

Guidelines for Entering Steps

Enter the step associated with each end product in Column C.

Enter a check (✓) in Column A next to those end products which must be evaluated during task performance.

YOUR ARE NOW READY TO GO ON TO WORKSHEET 06.

WORKSHEET 06: EVALUATION OF SAFETY PROCEDURES AND REGULATIONS

Overview

Explanation

Often certain procedures and regulations are followed in order to protect equipment and people during task performance. Following these safety procedures and regulations can be an important part of task performance. When certain safety procedures or regulations are not followed, damage to equipment or injury to personnel in the surrounding areas could occur. One of the indications of successful task performance may be whether the performer followed safety procedures and regulations during task performance.

Purpose

The information on Worksheet 06 will describe for the evaluator:

1. The safety procedures and regulations which should be evaluated.

2. When to evaluate following safety procedures and regulations.

The evaluator uses this information to decide whether the appropriate safety procedures and regulations were followed.

Completing Worksheet 06

To complete Worksheet 06, you will enter:

1. Column A Safety procedures and regulations.

2. Column B Steps.

Examples of Worksheet 06

Examples of completed Worksheet 06 are shown in Figures 11 and 12.

Worksheet 06: Evaluation of Safety Procedures and Regulations

Task: LOX Servicing B-52H Page 1 of 3 Developer: Sample

Column A Safety Procedures and Regulations	Column B Steps
Fire extinguisher positioned within easy reach	3
Power cable disconnected and power unit outside 50 ft. radius	4
Battery switch in OFF position	5
LOX cart at far limit of hose	7
Brakes set, wheels chocked on LOX cart	8
LOX cart grounded	9
Clean area around vent	10
Metal drip pans positioned under overboard vent and purge fitting	11
Protective clothing worn	13 - 34
Move handle with slow steady motion	15
Personnel clear of vent. Performer stands to one side	15, 25, 26, 27, 28

Figure 11. Example of Completed Worksheet 06: LOX Servicing B-52H.

Worksheet 06: Evaluation of Safety Procedures and Regulations

Task: LOX Servicing B-52H Page 2 of 3 Developer: Sample

Column A Safety Procedures and Regulations	Column B Steps
Valve compartment clean, dry, and clear	16
Filler valve clean, dry, and clear	17
Cart hose nozzle and purge fitting clean, dry, and clear	18
Capacity gage equalizer open	19, 20
Monitor LOX cart pressure	20, 23
Ensure valve is operational	21
Solid stream of LOX flows	23
Supply valve turned off while hose nozzle remains in receptacle	24
Monitor LOX cart pressure and leaks	26
Press nozzle to relieve pressure	29
Use gloved hand on handle	31

Figure 11. Example of Completed Worksheet 06: LOX Servicing B-52H (Continued)

Worksheet 06: Evaluation of Safety Procedures and Regulations	
Task: LOX Servicing B-52H Page 3 of 3	Developer: Sample
Column A Safety Procedures and Regulations	Column B Steps
LOX cart at least 50 ft. from aircraft, close vent valve while transporting, then open vent valve	34

Figure 11. Example of Completed Worksheet 06: LOX Servicing B-52H (Concluded)

Worksheet 06: Evaluation of Safety Procedures and Regulations

Task: Preflight KC-135A Developer: Sample

Column A Safety Procedures and Regulations	Column B Steps
Ensure correct center of gravity	1
Check pitot tube heat with back of hand	2
Lock wheels of stand with all available brakes and install platform pins	3, 15
Hands clean of oil and grease	11, 16

Figure 12. Example of Completed Worksheet 06: Preflight KC-135A.

Column A Safety Procedures and Regulations

Explanation

In Column A you should enter a description of the safety procedures and regulations that should be evaluated.

Purpose

This information describes for the evaluator the performer actions that reflect the following of safety procedures and regulations. The evaluator will use this description to decide whether the safety procedures and regulations were correctly performed.

Finding Safety Procedures and Regulations

1. Some procedures and regulations can be found by examining the step descriptions. Words like monitor, ensure, or check often indicate a safety procedure that is performed for safety during task performance.

2. Often, certain handles, controls, switches, valves, etc. must be in certain positions in order to ensure safety during task performance.

3. There are times when certain switches, handles, nozzles, etc. must be moved or rotated in a certain manner (e.g., slowly, steadily, quickly) for safety during task performance.

4. Certain items, such as plugs, valves, or nozzles, must be clean and clear to ensure safety during task performance.

5. In addition to safety procedures and regulations that are specific to the task under consideration, there are often general safety procedures and regulations which must be followed.

Which Safety Procedures and Regulations Should be Evaluated

You should use the criticality questions listed below to help you decide which safety procedures and regulations should be evaluated. Go through the task and ask yourself, "Will any of the following occur if specified procedures and regulations are not followed?"

1. Injury to personnel.

2. Damage to equipment or resources.

3. Performer required to redo the task or part of the task.

4. Co-worker (working with the performer on the same task) delayed in initiating or completing a task segment.

Steps or events that are done only for safety following task performance should not be considered now. For example, during an aircraft maintenance task, some safety procedures are performed to protect personnel during task performance, while others are performed to guarantee the safety of crew members during flight. The safety procedures that are concerned with later safe operation of the equipment will probably be considered end products. Safety procedures concerned with the immediate safe performance of the task at hand should be considered here. The use of protective equipment, including clothing, should be considered a safety procedure.

REMEMBER, SAFETY SHOULD ONLY BE EVALUATED WHEN IT IS CRITICAL ACCORDING TO THE CRITICALITY QUESTIONS,

AND

YOU SHOULD ONLY INCLUDE SAFETY PROCEDURES AND REGULATIONS THAT ARE PERFORMED FOR SAFETY DURING TASK PERFORMANCE.

Guidelines for Entering Safety Procedures and Regulations

Enter the safety procedures and regulations in Column A of Worksheet 06.

1. You should describe the safety procedures and regulations in terms the evaluator will understand. Common, well-known procedures and regulations can be referred to by name only.

2. When you are describing a safety procedure that is not common or is specific to the task under consideration, you should describe performer actions or outcomes that the evaluator can see.

3. If you have no entries, enter N/A in Column A, and go onto Worksheet 07.

REMEMBER, THE EVALUATOR WILL USE YOUR DESCRIPTIONS TO DECIDE WHETHER THE SAFETY PROCEDURES OR REGULATIONS WERE PERFORMED CORRECTLY.

Acceptable entries should resemble the following examples:

General Safety Procedures and Regulations

Aircraft grounded.
Wear protective clothing.
External power disconnected.
Fire extinguisher within easy reach.
Personnel clear of vents, carts, etc.
Clearance obtained.

Specific Safety Procedures and Regulations From Several Tasks

Seat pins installed.
Ensure that fuel is adequately distributed.
Fuel control switch in feed position.
All eight lights of fire detection system illuminated.
Manifold in open position.
Throttles closed.
Brakes set and chocked.
Landing gear handle down and locked.
Visually check switches.
Monitor indicator lights.
Open nozzle slowly.
Do not build pressure over 30± 5 psi.

Column B Steps

Explanation

In Column B, you should list the steps when safety procedures or regulations should be evaluated. Steps should be listed for each entry in Column A.

Purpose

The list of steps tells the evaluator when to evaluate the safety procedures and regulations.

Finding Steps

Safety procedures and regulations can be evaluated for:

1. A step in the task.
2. Several different steps in the task.
3. A series of steps in the task.
4. The whole task.

Once again you may want to refer to the criticality questions to help you decide when to evaluate each safety procedure and regulation. Remember, for each safety procedure or regulation listed in Column A, you should go through the steps and ask yourself, "Will any of the following occur if this safety procedure or regulation is not followed at this step?"

1. Injury to personnel.

2. Damage to equipment or resources.

3. Performer required to redo the task or part of the task.

4. Co-worker (working with the performer on the same task) delayed in initiating or completing a task segment.

Guidelines for Entering Steps

The steps should be listed in Column B of Worksheet 06.

Be sure to include all of the steps where each safety procedure and regulation should be evaluated.

YOU ARE NOW READY TO GO ON TO WORKSHEET 07.

WORKSHEET 07: EVALUATION OF TOOLS, EQUIPMENT, AND MATERIALS USE

Overview

Explanation

Most tasks are performed with the aid of tools, equipment, and materials. There are times when successful task performance could be prevented if misuse of tools, equipment, or materials occurs. On Worksheet 07 you will enter information about how the tools, equipment, and materials should be used during task performance.

Purpose

The information on Worksheet 07 tells the evaluator:

1. Which tools, equipment, and materials have uses that should be evaluated.

2. The specific size or type of tools, equipment, and materials that should be used.

3. The correct use of the tools, equipment, and materials.

4. When in the task, the use of each item of tools, equipment, or material should be evaluated.

The evaluator uses the information to decide whether the items were used correctly.

Completing Worksheet 07

In order to complete Worksheet 07, you will enter the following information:

1. Column A Tools, Equipment, and Materials
2. Column B Size or Type
3. Column C Correct Use
4. Column D Steps Associated With Use

Examples of Worksheet 07

See Figures 13 and 14 for completed examples of Worksheet 07.

Worksheet 07: Evaluation of Tools, Equipment, and Materials Use

Task: LOX Servicing B-52H Developer: Sample

Column A Tools, Equipment and Materials Use	Column B Size/Type	Column C Correct Use	Column D Steps
Drip pans	Metal, clean	Positioned under overhead vents and purge fitting vent	11
Screwdriver	Correct size	Rotate fasteners CCW	12
Rags	Clean, dry	Used to clean	10, 16, 17, 18
Screwdriver	Correct size	Secure fasteners	32

Figure 13. Example of Completed Worksheet 07: LOX Servicing B-52H.

Worksheet 07: Evaluation of Tools, Equipment, and Materials Use

Task: Preflight KC-135A Developer: Sample

Column A Tools, Equipment and Materials Use	Column B Size/Type	Column C Correct Use	Column D Steps
Stand	B-4	Lock wheels with all available brakes. Install platform pins	3, 15
Tape measure	Standard	Measure distance between gland nut and strut bottom	23
Tire gage	Standard	Insert tape gage onto valve stem and push down smoothly	24

Figure 14. Example of Completed Worksheet 07: Preflight KC-135A.

Column A Tools, Equipment, and Materials

Explanation

Several different items of tools, equipment, and materials are normally used to complete a task. In Column A, you will enter those items which have uses that should be evaluated.

Purpose

This list will tell the evaluator which tools, equipment, and materials should be evaluated. It is important that all evaluators evaluate the use of the same items.

Finding Critical Tools, Equipment, and Materials

A list of example tools, equipment, and materials is shown below. This list is not complete, but it should give you an idea of the kinds of items to consider.

Tools, Equipment, and Materials

Communications Equipment
- Headsets
- Handheld transmitters
- Receivers
- Radios
- Whistles

Test Equipment
- Meters (e.g., multimeter)
- Gages
- Specialized test sets

Safety Equipment
- Chocks
- Fire extinguisher
- Engine run fence
- Fire bottle

Tools
- Mini-kit
- Hand crank
- Tool box
- Ground cord
- Torque wrench
- Cowling wrench
- Tire gage
- Lock wire
- Wire brush
- Screwdriver
- Sump drain tool

Materials
- Rags
- Fluids (e.g., hydraulic)
- Sump bags
- Solvents or cleaners (e.g., freon)
- Gels (e.g., silica)
- Duct tape
- Scotch brite
- Window cleaner

Tools, Equipment, and Materials
(Continued)

Miscellaneous
Wands
Marshaller's vest
B-1/B-4/B-5 stand
Power unit/air cart
Stands
Dipstick
Waste fuel containers
Drip pans
Extra ground wire
Drain hose
Pogos

Keep in mind that the operational equipment (e.g., aircraft or other equipment being worked on) is not categorized as tools, equipment, or materials here. When the task involves repairing or maintaining, cleaning, or inspecting an item of equipment, that item would not be considered tools, equipment, or material for the purposes of TEF development. Only those items used to repair, maintain, clean, or inspect the operational equipment or other equipment being worked on will be listed on this worksheet.

Think about the tools, equipment, and materials required to complete the task.

Which Tools, Equipment, and Materials Should be Evaluated

You should decide which tools, equipment, and materials should be evaluated by applying the criticality questions. For each item used in the task, ask yourself, "Will any of the following result if misuse of this tool, equipment, or material occurs?"

1. Injury to personnel.

2. Damage or loss to equipment or resources.

3. Performer required to redo the task or part of the task.

4. Co-worker (working with the performer on the same task) delayed in initiating or completing a task segment.

Keep in mind that misuse of tools, equipment, and materials includes the following:

1. Using the tools, equipment, or materials in an incorrect manner.

2. Using the wrong tool, equipment, or material.

REMEMBER, THE USE OF TOOLS, EQUIPMENT, AND MATERIALS SHOULD ONLY BE EVALUATED WHEN IT IS CRITICAL ACCORDING TO THE CRITICALITY QUESTIONS.

Guidelines for Entering Tools, Equipment, and Materials

The tools, equipment, and materials should be listed in Column A of Worksheet 07.

If you have no entries for tools, equipment, and materials, go on to Worksheet 08.

Column B Size/Type

Explanation

There are times when only specific sizes or types of tools, equipment, or materials should be used. When this occurs, the appropriate size or type of each tool, equipment item, or material will be entered in Column B of Worksheet 07.

Purpose

The information in this column provides the evaluator with a specific description of the tools, equipment, or materials to be used. The evaluator can check the size or type entered in Column B against the size or type of item the performer actually uses. By doing this the evaluator can decide whether or not the performer is using the correct tools, equipment, or materials.

Guidelines for Entering Size/Type

Enter the size or type in Column B of Worksheet 07.

1. It may not be necessary to enter a size or type for every item listed in Column A. It is OK to enter "Standard" when size/type is not important. For every entry in Column A, complete Column B as follows:

    a. Enter the description of the size or type

    or

    b. Enter "Standard"

2. Be sure to make the entry in the same row as the tool, equipment item, or material to which the entry refers.

Some examples of tools, equipment, and materials and their size/type are:

Tools, Equipment, and Materials	Size/Type
Rags	Clean, dry
Lockwire	MS20995C32
Wrench	Cowling
Freon cleaner	Standard
Drip pans	Clean, metal
Screwdriver	Phillips
Wire brush	Standard

Column C Correct Use

Explanation

In Column C you will describe exactly how the tools, equipment, and materials should be used.

Purpose

The information in Column C describes for the evaluator exactly what performer actions represent acceptable use of tools, equipment, and materials. The evaluator uses this information to decide whether the performer used the tools, equipment, or materials in the correct manner.

Guidelines for Entering Correct Use

The correct use should be entered in Column C.

1. Describe a correct use for every item listed in Column A.

2. Describe how the items are used.

3. Be specific.

4. Describe observable performer actions.

5. When a particular item is used for more than one purpose, be sure to make separate entries for each different use.

REMEMBER THE EVALUATOR WILL USE YOUR DESCRIPTIONS TO DECIDE WHETHER THE ITEMS WERE USED CORRECTLY.

Some examples of acceptable descriptions of correct use are shown below:

Tools, Equipment, and Materials	Size/Type	Correct Use
Rags	Clean, dry	Use to clean area around overboard vent.
Lockwire	MS20995C32	Pass through center of plug.
Wrench	Cowling	Open cowling.
Freon cleaner	Standard	Clean electrical contact pin.
Drip pans	Clean, metal	Place under overboard vent.
Screwdriver	Phillips	Rotate fasteners 1/2 turn CCW.
Wirebrush	Standard	Clean inside breech and cap.

Column D Step

Explanation

You have already listed the tools, equipment, and materials, the appropriate size or type, and the correct use. In Column D you will list the steps when these items should be evaluated.

Purpose

This list tells the evaluator exactly when in the task that the use of tools, equipment, and materials should be evaluated.

Finding Critical Steps

The use of tools, equipment, and materials can be evaluated for:

1. A step in the task.
2. Several steps in the task.
3. A sequence of steps in the task.
4. The whole task.

Once again, you may want to apply the criticality questions to help you decide when the tools, equipment, and material uses you have listed should be evaluated.

For each item listed in Column A, you should go through the task and ask yourself, "Will any of the following result if misuse of this item occurs at this step?"

1. Injury to personnel.

2. Damage or loss to equipment or resources.

3. Performer required to redo the task or part of the task.

4. Co-worker (working with the performer on the same task) delayed in initiating or completing a task segment.

REMEMBER, THE TOOLS, EQUIPMENT, AND MATERIALS USE SHOULD ONLY BE EVALUATED WHEN IT IS CRITICAL ACCORDING TO THE CRITICALITY QUESTIONS.

Guidelines for Entering Steps

The steps should be entered in Column D.

1. Be sure to enter the steps in the correct row of the worksheet. For example, when a particular item has different uses, be sure to enter the steps in the row next to the appropriate use.

2. Enter all of the steps that should be evaluated for each item.

YOU ARE NOW READY TO GO ON TO WORKSHEET 08.

WORKSHEET 08: EVALUATION SCENARIO

Overview

Explanation

Worksheet 08 is used to describe how the task should be presented to the performer for evaluation purposes. When Worksheet 08 is completed, an evaluation scenario results.

Purpose

The evaluator will use the information from Worksheet 08 to set up the task for the evaluation. The instructions for setting up the evaluation scenario are provided for the evaluator to ensure that different evaluators set up the task in the same way. In order to conduct fair evaluations, it is important that each performer is presented with the same evaluation scenario and that different evaluators use the same scenario to evaluate the same task.

Completing Worksheet 08

In order to complete the worksheet, you will describe:

1. Line A Best Evaluation Method.
2. Block B Preventative Environmental Conditions.
3. Block C Presentation of Operational Equipment.
4. Block D Help Permitted.
5. Block E Presentation of Performer Tools, Equipment, and Materials.
6. Block F Evaluator Equipment.
7. Block G Evaluator Time Estimates.
8. Block H Number of Evaluators.

Examples of Worksheet 08

Examples of completed Worksheet 08 are shown in Figures 15 and 16.

Worksheet 08: Evaluation Scenario

Task: LOX Servicing B-52H

Developer: Sample

Line A Evaluation Method: Actual Equipment *Job Environment*

Block B Preventative Environmental Conditions

Thunderstorms within 3 miles

Block C Presentation of Operational Equipment/Task

Aircraft requires LOX servicing
Aircraft grounded
Aircraft not within 50 ft. of other aircraft
No servicing of fuel, oil, hydraulics, or water
Electrical power OFF
Personnel off aircraft
No oxygen leaks, no components removed, no purging required

Block D Help Permitted

No help is allowed

Block E Presentation of Performer Tools, Equipment, and Materials

Tools, Equipment, and Materials	Presentation
Mini kit	Preselected
Face shields	Preselected
Leather gloves with wool inserts	Preselected
Aprons	Preselected
Hat (non-mesh)	Preselected
Sleeves	Preselected
Extra ground wire	Preselected
LOX cart	Preselected
Drip pans (2)	Preselected
Fire bottle	Preselected
Rags	Preselected

Block F Evaluator Equipment

Stopwatch
Face shield
Leather gloves with wool inserts
Aprons
Hat (non-mesh)
Sleeves

Block G Evaluator Time Estimates

Time to set up 20 minutes
Time to evaluate 45 minutes
Time to reset N/A

Block H Number of Evaluators 1

Figure 15. Example of Completed Worksheet 08: LOX Servicing B-52H.

Worksheet 08: Evaluation Scenario

Task: Preflight KC-135A

Developer: Sample

Line A Evaluation Method: Actual Equipment Job Environment

Block B Preventative Environmental Conditions

N/A

Block C Presentation of Operational Equipment/Task

No other maintenance being performed
Aircraft requires preflight inspection
Aircraft grounded

Block D Help Permitted

No help is allowed

Block E Presentation of Performer Tools, Equipment, and Materials

Tools, Equipment, and Materials	Presentation
Mini kit	Preselected
Tire gage	Preselected
Tape measure	Preselected
Work cards	Preselected
Rags	Preselected
B-1, B-4, B-5 stands	Preselected

Block F Evaluator Equipment

Tire gage
Work cards

Block G Evaluator Time Estimates

Time to set up N/A
Time to evaluate 45 minutes
Time to reset N/A

Block H Number of Evaluators 1

Figure 16. Example of Completed Worksheet 08: Preflight KC-135A.

Block A Evaluation Method

Explanation

Now that you have decided what should be evaluated during task performance, you can select a method of evaluation. Three evaluation methods were discussed earlier in this handbook. You reviewed these three methods to determine if any of the three could be used to evaluate the task under consideration. Now you will select the best method.

Purpose

Block A tells the evaluator which evaluation method should be used to evaluate the task.

Selecting the Best Method

The three evaluation methods are as follows:

1. Method 1. Use Actual Equipment in Job Environment. In this method, task performance is evaluated as it actually occurs in the job environment.

2. Method 2. Use "Rigged" Actual Equipment. In this method, task performance is evaluated on actual equipment that has been "rigged" to create the desired situation.

3. Method 3. Use Trainer or Simulator. In this method, task performance is evaluated on a trainer or simulator.

To select an evaluation method, ask yourself the following questions:

Questions on Method 1

1. Is the task under consideration performed frequently in the job environment?

NO - Go to Method 2.

YES - Go to the next question.

2. Will the evaluation of task performance interfere with successful completion of the task?

NO - Method 1 will probably be appropriate. Think about the critical aspects of the task to be sure they can be evaluated during actual task performance.

YES - Go to Method 2.

Questions on Method 2

1. Is it possible to "rig" the operational equipment to present the desired task?

NO - Go to Method 3.

YES - Go to the next question.

2. Is it possible to "rig" the aircraft without creating a hazardous situation?

NO - Go to Method 3.

YES - Method 2 will probably be appropriate. Think about the critical aspects of task performance to be sure they can be evaluated using "rigged" equipment.

Questions on Method 3

1. Is a trainer or simulator available?

NO - Method 1 or Method 2 must be used. Reconsider the questions above.

YES - Go to the next question.

2. Can the task be presented on the trainer or simulator?

NO - Method 1 or Method 2 must be used. Reconsider the questions above.

YES - Method 3 will probably be appropriate. Think about the critical aspects of task performance to be sure they can be evaluated using the trainer or simulator.

Guidelines for Entering Evaluation Method

Based on the questions above, you have selected an evaluation method. Record your choice in Line A of Worksheet 08. Enter one of the following:

1. Actual Equipment, Job Environment
2. Actual Equipment, Rigged
3. Trainer (and name of trainer)

Block B Preventative Environmental Conditions

Explanation

In Block B you will enter the preventative environmental conditions. Preventative environmental conditions are conditions under which the task should not be performed or evaluated. These include conditions under which it would be unfair, impractical, hazardous, or impossible to conduct the evaluation.

Purpose

The evaluator will use this information to select an appropriate and fair time to conduct the evaluation.

Finding Preventative Environmental Conditions

The most common way environmental conditions prevent task performance or evaluation is by creating a hazardous situation (e.g., lightning during LOX servicing). Another way environmental conditions prevent task performance is by making the task extremely difficult to perform and thus unfair to evaluate (e.g., icy surfaces during the towing task). The evaluation must be conducted when no preventative conditions exist. You should select those conditions which would prevent the task from being performed or evaluated.

Think about the following list of general environmental conditions. For each general environmental condition, ask yourself, "Are there any specific conditions under which the evaluation should not be performed?"

1. Light.
2. Location.
3. Weather.
4. Noise.
5. Temperature.

Guidelines for Entering Preventative Environmental Conditions

Enter the specific preventative environmental conditions in Block B of Worksheet 08. If there are no preventative environmental conditions, write N/A in Block B.

Some entries you may want to consider are shown below:

1. Light: Inadequate light.

2. Location:
   - Aircraft within 50 feet of hangar.
   - Aircraft within 50 feet of buildings.
   - Aircraft within 50 feet of other aircraft.
   - Aircraft in dock.
   - Icy surface.
   - Unlevel surface.

3. Weather:
   - Rain.
   - Snow.
   - Lightning within 3 miles.
   - High winds.

4. Noise:
   - Flightline level.
   - Noise beyond correction.
   - Noise requiring ear defenders.

5. Temperature:
   - Above 90°F.
   - Below 32°F.
   - Chill factor too low.

Block C Presentation of Operational Equipment or Task

Explanation

This is the most important part of the evaluation scenario. In Block C, you should describe how the operational equipment should be presented to the performer.

Purpose

The evaluator will follow your description to prepare the operational equipment for the evaluation. It is important that all evaluators set up the operational equipment in the same manner so that performers can be evaluated in the same way.

Guidelines for Entering Presentation of Operational Equipment/Task

You should be very specific and describe exactly what must be done to prepare the operational equipment for the evaluation.

You can use the questions below to help you describe how to prepare the operational equipment. You do not have to respond to every question, but you should provide all the information the evaluator will need to prepare the operational equipment.

REMEMBER, THE EVALUATOR WILL FOLLOW YOUR DESCRIPTION TO SET UP THE OPERATIONAL EQUIPMENT. IN ORDER TO CONDUCT FAIR EVALUATIONS, IT IS IMPORTANT THAT ALL EVALUATORS SET UP THE OPERATIONAL EQUIPMENT IN THE SAME MANNER.

Question 1. Should the operational equipment require the task to be performed? For example,

1. The aircraft must require LOX servicing.

2. The aircraft must require refueling.

3. The aircraft must require starter cartridge removal.

4. The aircraft must require towing.

If your answer is "yes," enter: the name of the equipment, the words "must require," and the name of the task in Block C.

Question 2. What general conditions should exist when the task is performed? For instance,

1. What must be turned on?

2. What must be turned off?

3. What should not be in the surrounding area?

4. Should the equipment be grounded?

5. What conditions would result in safety hazards?

Some examples of entries are:

1. Power on.

2. Power off.

3. No other aircraft within 50 feet.

4. Equipment grounded.

5. No other maintenance being performed.

Enter the conditions in Block C.

Question 3. What should be pre-performed or set up for the performer before the start of the evaluation? For instance,

1. What preliminary steps of the task are not part of the evaluation?

2. What access doors should be open?

3. What obstructing components should be removed?

4. What must be connected or disconnected?

Some examples of entries are:

1. Steps 1 to 3 pre-performed.

2. Access doors (X3) open.

3. Cowling removed.

4. Relay N2 disconnected.

Enter the details in Block C.

Question 4. Are there any other specific "rigging" details? For instance,

1. What dials, valves, controls, or switches should be positioned?

2. What adjustments should be made?

Some examples of entries are:

1. Dial X7 positioned at 3.

2. Switch 9 off.

Enter the details in Block C.

Question 5. What faults, malfunctions, or defective parts should be inserted? (This question does not apply when Evaluation Method 1 is used; however, when a trainer or simulator is used, you should provide a response to this question.)

Some examples of entries of malfunctions are:

1. Hot start malfunction.

2. Loss of aircraft power, no external power available.

3. No fuel flow, other indications normal.

4. Standby pump failure.

5. Low oil pressure light on.

Enter the faults, malfunctions, etc. in Block C.

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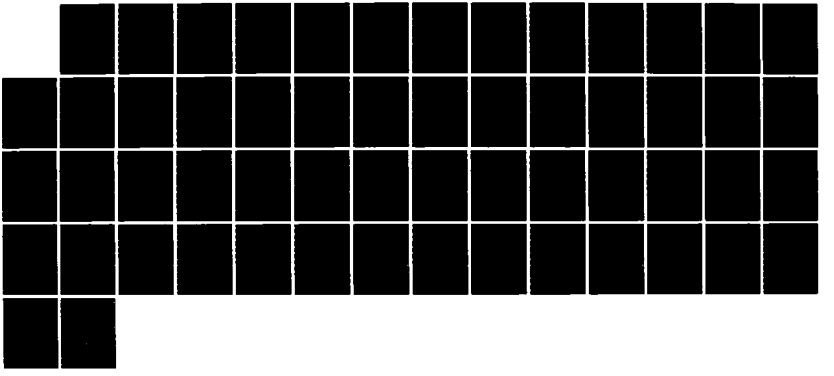
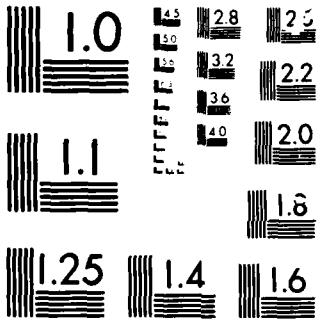




MICROCOPY CHART

Checking Entries

Review all of the entries in Block C. Ask yourself the following:

1. Have I provided all the details the evaluator will need to set up the evaluation?

2. Are any of the instructions too vague or unclear? Will the evaluator be able to use these instructions to set up the operational equipment?

Add to or change your entries as necessary.

Block D Help Permitted

Explanation

There are times when the performer is allowed assistance during task performance. In Block D, you will describe when and what type of help is permitted during the performance of the task.

Purpose

The information in Block D tells the evaluator when and what type of assistance the performer is allowed. In order to conduct fair evaluations, it is important that all performers receive the same type and amount of help.

Guidelines for Entering Help Permitted

Describe when help is allowed and what type of help is allowed in Block D.

1. Enter the parts of the task that require more than one person.

2. Enter the parts of the task where the performer is allowed to request assistance.

REMEMBER, THE EVALUATOR WILL USE YOUR DESCRIPTION TO DECIDE WHEN AND WHAT TYPE OF ASSISTANCE IS PERMITTED.

Some examples of help permitted are shown below:

1. Other members of the team will perform their duties.

2. Performer can request assistance at Steps 7 to 10.

3. Performer can request responses from ground observer.

4. Performer can receive assistance in connecting external power.

5. No help is allowed.

Block E Presentation of Performer Tools, Equipment, and Materials

Explanation

You have already described how the operational equipment should be presented to the performer. Now you will describe how the tools, equipment, and materials needed to perform the task should be presented.

Purpose

The evaluator will use your descriptions to prepare the tools, equipment, and materials for the evaluation. It is important that the tools, equipment, and materials are presented to each performer in exactly the same way.

Guidelines for Entering Performer Tools, Equipment, and Materials

In Block D of Worksheet 08 you should list the tools, equipment, and materials the performer will need to complete the task.

Be sure to include all of the items listed on Worksheet 07.

Guidelines for Entering Presentation Description

Describing the presentation of tools, equipment, and materials is fairly simple. When equipment is required, it can be presented to the performer in two ways:

1. Set up for the performer,

or

2. Performer is required to set up.

For example, suppose the equipment is a trim box (used in trimming a jet engine). The trim box can be presented to the student already cabled and ready to go (i.e., with all the switches set in their proper

position) or the performer could be expected to perform the cabling and set the switches as part of the evaluation. It is important that all performers receive the equipment in the same manner.

When tools or materials are required, they can be presented to the performer in two ways:

1. The performer must select,

or

2. Preselected for the performer.

For example, when tools are required, the tools can be presented in the tool box or the correct tools can be preselected and presented to the performer.

For each item you should enter the appropriate presentation description in Block E of Worksheet 08.

For equipment you should enter:

1. Set up for the performer,
or
2. Performer must set up.

For tools and materials you should enter:

1. Preselected for performer,
or
2. Performer must select.

Block F Evaluator Equipment

Explanation

The evaluator may need some tools, equipment, or protective clothing in order to conduct the evaluation. These items will be listed in Block F of Worksheet 08.

Purpose

The information in Block F tells the evaluator what tools, equipment, or protective clothing are needed to conduct the evaluation.

Determining Evaluator Equipment

You can determine the items the evaluator will need by reviewing the worksheets already completed.

If time is evaluated, the evaluator will need a stopwatch.

The evaluator may need tools to evaluate the end products listed on Worksheet 05. Carefully examine the list of end products. For each end product, ask yourself, "Does the evaluator need any tools to measure or evaluate the end product?"

The evaluator may also need protective clothing, which can usually be determined by looking at the protective clothing the performer needs. (These items should be listed on Worksheet 06.) In most cases, if the performer needs ear plugs, gloves, or aprons, the evaluator will also need them. You should review the protective clothing requirements for the performer and decide which ones the evaluator will need.

Guidelines for Entering Evaluator Equipment

Enter the evaluator equipment in Block F. Some entries you may want to consider are listed below:

Stopwatch	Mask
Gages	Leather gloves
Tape measure	Apron
Dipsticks	Mat
Ear defenders	Checklists
Technical orders	OJT manuals

Block G Evaluator Time Estimates

Explanation

In Block G, three time estimates are provided:

1. Time to set up the evaluation.
2. Time to complete the evaluation.
3. Time to re-set up the evaluation.

Purpose

This information gives the evaluator a rough estimate of how much time to set aside for the evaluation, including setting up the evaluation and the actual task performance.

Guidelines for Entering Evaluator Time Estimates

Simply enter a rough time estimate on each line in Block G.

Line H Number of Evaluators

Explanation

Some tasks may be too complex to be accurately and completely evaluated by one person. When this happens, it is necessary to have more than one evaluator.

Purpose

This number tells when more than one evaluator is necessary.

Guidelines for Entering Number of Evaluators

Enter the necessary number of evaluators on Line H.

YOU ARE NOW READY TO TRANSFER THE INFORMATION FROM WORKSHEETS 01 THROUGH 08 ONTO THE TASK EVALUATION FORM.

CONSTRUCT THE TASK EVALUATION FORM

Explanation

At this point, you will transfer the information you have already recorded on Worksheets 01 to 08 onto the TEF. The TEF has two parts: the Evaluation Information page and the Task Evaluation Form pages. The information from Worksheets 02 and 08 will be entered on the Evaluator Information page. The information from Worksheet 01 and Worksheets 03 through 07 will be entered on the pages titled Task Evaluation Form.

It will be easier to complete Worksheet 09 after the information from the other worksheets has been entered on the TEF. Thus, you should construct the TEF before you go on to Worksheet 09 (Scoring) Criteria).

In this section, detailed instructions are provided for entering information on the Evaluator Information page and the Task Evaluation Form pages.

Getting Started

The first thing you should do is collect the worksheets. They should be in the order in which they were developed.

This is a good time to review the information you have entered on the worksheets. Keep in mind that the evaluator will use this information to evaluate task performance. As you review the worksheets, ask yourself:

> Is the information complete - has every event in the task which should be evaluated been included?
>
> Is the information easy to understand - can the evaluator use the information to decide whether or not the task has been performed correctly?

Edit the worksheets as necessary.

You are now ready to enter the information from the worksheets onto the TEF.

Examples of completed TEFs are contained in Appendix A.

Blank TEFs can be found in Appendix C. Since only 10 steps can be included on each TEF page, it will be necessary to copy some extra pages if your task has more than 10 steps. You will probably want to make some extra copies of both pages (Evaluator Information page and Task Evaluation page).

Before you begin transferring the information from the worksheets, you should:

1. Enter the date of development and the developer (your name or agency) on the Evaluator Information page in the spaces provided.

2. Enter the task title and date of development on each TEF page in the spaces provided.

You are now ready to begin with Worksheet 01.

Worksheet 01

The information from Worksheet 01 will be entered in Column 1 of the page entitled Task Evaluation Form.

Enter the step number from Column A of the Worksheet in the box inside of Column 1 of the TEF.

Enter the step description from Column B of the worksheet in the large area outside the small box in Column 1 of the TEF.

The information should be entered on the TEF as follows:

1. Description
1 The number is entered in the box, the step description is entered here.
2 Repeat this process until all of the step numbers and descriptions have been entered.

Worksheet 02

The information from Worksheet 02 will be entered in Blocks A and B of the page titled Evaluator Information page.

Be sure to enter the information in the appropriate line on the Evaluator Information page.

The information should be entered as follows:

Worksheet 02		Evaluator Information Page
Line A	→	Block A
Line B	→	Block A
Line C	→	Block A
Line D	→	Block A
Line E	→	Block A
Line F	→	Block B

Worksheet 03

The information from Worksheet 03 will be entered in Columns 2 and 3 of the TEF.

The steps of the task are already listed in Column 1 of the TEF. Find the rows of the TEF which correspond to the steps listed in Column A of the worksheet.

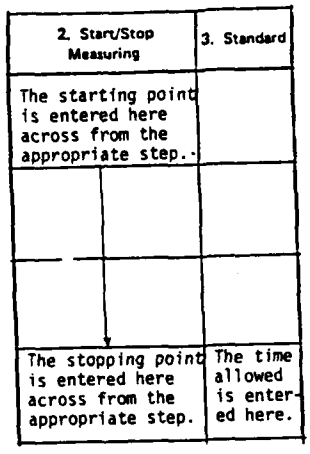
The starting point from Column B of the worksheet should be entered in Column 2 of the TEF. The starting point should be entered in the row of the TEF that corresponds to the step at which the evaluator should start measuring time.

The stopping point from Column C of the worksheet should be entered in Column 2 of the TEF. The stopping point should be entered in the row of the TEF that corresponds to the step at which the evaluator should stop measuring time.

The standard from Column D of the worksheet should be entered in Column 3 of the TEF. The standard should be entered in the same row where the stopping point was entered.

Next you should draw an arrow (↓) in Column 2 of the TEF. The arrow should begin in the row corresponding to the step where you entered the starting point. The arrow should end in the row corresponding to the step where you entered the stopping point.

The information from Worksheet 03 should be entered as follows:



Worksheet 04

The information from Worksheet 04 will be entered in Column 4 of the TEF.

In Block A of the worksheet, you entered the series of steps which should be evaluated. Find the row of the TEF which corresponds to the first step of the series. Enter the statement from Block A of the worksheet in the row of the TEF that corresponds to the first step of the series.

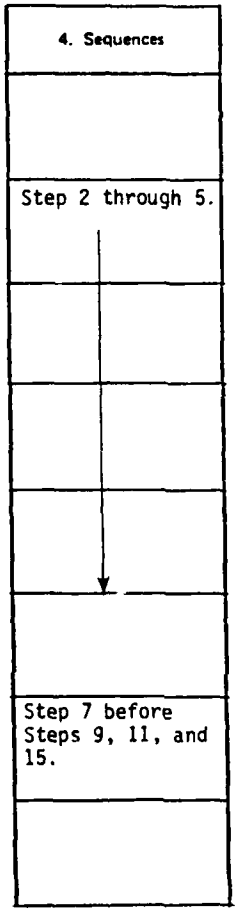
Next, draw an arrow in Column 4 of the TEF from the first step in the series to the last step in the series.

Repeat this process for each series.

In Block B of the worksheet, you entered single steps which should be performed before other steps. Find the row of the TEF which corresponds to the first step. Enter the statement from Block B of the worksheet in the row of the TEF that corresponds to the first step.

Repeat this process for each single step.

The information from Worksheet 04 should be entered on the TEF as follows:



Worksheet 05

The information from Worksheet 05 will be entered in Column 5 of the TEF.

For each end product, find the row of the TEF that corresponds to the step listed in Column C of the worksheet.

Enter the end product from Column A and the criteria from Column B in the row of the TEF which corresponds to the step listed in Column C. If an end product is preceded by a check (✓), be sure to enter the check on the TEF.

When more than one type of criteria are listed for an end product, enter a slash mark (/) after each criterion type. You do not have to re-enter the end product for each criterion type.

The information from Worksheet 05 should be entered on the TEF as follows:

5. End-Product Criteria
End product criterion type 1/ criterion type 2/ criterion type 3/
✓ End Product with one criterion type and check mark.
Column 5 completed in correct row/ criteria separated by slashes/

NOTE:

Criteria types are separated by slash marks; but an end product does not have to be re-entered for each criterion type.

Worksheet 06

The information from Worksheet 06 will be entered in Column 6 of the TEF.

For each safety procedure or regulation, find the row of the TEF which corresponds to the steps listed in Column B of the worksheet. Enter the descriptions of the safety procedures and regulations in the row of the TEF which corresponds to the step listed on the worksheet.

When a particular safety procedure or regulation applies to more than one step, repeat the entry for every applicable step.

When there is more than one entry for a step, enter a slash (/) after each entry.

The information from Worksheet 06 should be entered on the TEF as follows:

6. Procedures and Regulations
The safety procedure or regulation is entered in the correct row.
The safety procedure or regulation is entered in the correct row/When more than one safety procedure or regulation is entered for a step, ~~each entry is followed by a slash/~~
The safety procedure or regulation is entered in the correct row/The safety procedure or regulation is entered at every applicable step/

NOTE:

When there is more than one safety procedure or regulation for a step, each entry is followed by a slash mark.

Worksheet 07

The information from Worksheet 07 will be entered in Column 7 of the TEF.

For each item, find the row of the TEF which corresponds to the step listed in Column D of the worksheet. Enter the information from Columns A, B, and C of the worksheet in the row of the TEF that corresponds to the step listed on the worksheet.

When a particular item is used at more than one step, repeat the entry for every applicable step.

When there is more than one entry for a step, enter a slash mark (/) after each entry.

The information from Worksheet 07 should be entered on the TEF as follows:

7. Item, Size or Type, Use
The item, size or type, and use are entered in the correct row.
The item, size or type, and use are entered at every applicable step.
Item 1, size or type, use/ Item 2, size or type, use/ Item 3, size or type, use/

NOTE:

When there is more than one item for a step, each entry is followed by a slash mark.

Worksheet 08

The information from Worksheet 08 will be entered on the page titled Evaluator Information.

Be sure to enter the information from Worksheet 08 onto the appropriate Block of the Evaluator Information page.

The information from Worksheet 08 should be entered on the TEF as follows:

Worksheet 08		Evaluator Information Page
Line A	→	Block C
Block B	→	Block D
Block C	→	Block E
Block D	→	Block H
Block E	→	Block F
Block F	→	Block G
Block G	→	Block I
Block H	→	Block J

You have finished entering all the information from Worksheets 01 through 08 onto the TEF.

Number the pages of the TEF in the spaces provided.

Automatic Failure

Explanation

There is one more thing you should do to complete the construction of the TEF. You have already entered the parts of the task that should be evaluated for each evaluation area. Now you will identify those entries that could involve the most serious consequences if not correctly performed. Often there are a few entries on the TEF that, if not performed correctly, would result in automatic failure and possibly termination of the evaluation. This includes those entries that, if not performed correctly, result in failure of the evaluation -- even if all of the other entries are correctly performed.

Purpose

The entries that could result in automatic failure and possibly termination of the evaluation will be marked on the TEF for the evaluator. During the evaluation, if one of these entries is not correctly performed, the evaluator will automatically fail the performer and possibly terminate the evaluation.

Finding Automatic Failures

You should review all of the entries in each evaluation area. Ask yourself:

1. Will successful completion of the task be prevented even if everything else is performed correctly?

2. Will such damage to equipment result that the evaluation would be terminated?

3. Will such a risk of injury result that the evaluation would be terminated?

Some tasks will not have entries that lead to automatic failure. The most common automatic failures are extreme safety hazards or important end product criteria.

REMEMBER, ONLY THOSE ENTRIES THAT COULD RESULT IN AUTOMATIC FAILURE--EVEN WHEN EVERY OTHER ENTRY ON THE TEF IS PERFORMED CORRECTLY--SHOULD BE CONSIDERED HERE.

Guidelines for Entering Automatic Failures

The entries which could lead to automatic failure should be marked with an asterisk (*) on the TEF.

The instructions below describe exactly where asterisks should be placed in each evaluation area.

Time/Speed. Place the asterisk, if appropriate, before the standard in Column 3.

Sequence-Following. Rarely will every step in a sequence qualify as automatic failure. There are times when several steps in a long sequence will qualify. These steps should be identified with an asterisk in Column 4 in the upper left-hand corner.

End-Product. Place the asterisk, if appropriate, before the criteria which qualify. Do not place the asterisk before the end product.

Safety. Place the asterisk, if appropriate, before the procedure or regulation which qualifies. When a procedure or regulation could result in automatic failure at more than one step, place an asterisk before each entry which qualifies.

Tools, Equipment, and Materials Use. Place the asterisk, if appropriate, before the tools, equipment, or material which qualifies. When an item could result in automatic failure at more than one step, place an asterisk before each entry which qualifies.

REMEMBER, ASTERISKED ENTRIES WILL RESULT IN AUTOMATIC FAILURE, EVEN IF EVERY OTHER EVENT ON THE TEF IS CORRECTLY PERFORMED.

Enter the asterisks to the left of the TEF entries that could result in automatic failure.

Examples of Automatic Failure

For examples of automatic failure, see the completed TEF for the LOX servicing task in Appendix A. (The preflight task does not have any automatic failures.)

YOU ARE NOW READY TO GO ON TO WORKSHEET 09.

WORKSHEET 09: SCORING CRITERIA

Overview

Explanation

Worksheet 09 is used to assign points to each non-asterisked entry on the TEF. The number of points assigned to each entry in an evaluation area is determined by three factors as follows:

1. The number of points assigned to the evaluation area.

2. The number of total entries in the evaluation area.

3. The number of asterisked entries in the evaluation area.

A formula for calculating the points per non-asterisked entry is included on Worksheet 09. Completing the formula involves the following steps:

1. The evaluation areas are ranked in order of their importance in the task.

2. The points assigned to each evaluation area are based on the assigned ranks.

3. The number of asterisked entries and the number of total entries per evaluation area are counted.

4. The points per evaluation area are divided among the entries in the evaluation area. Twice as many points are assigned to asterisked entries.

5. The formula results in the number of points per non-asterisked entries.

Purpose

The number of points per non-asterisked entry is transferred to the Evaluator Information page. This tells the evaluator the number of points that should be subtracted for each non-asterisked entry which is not successfully completed. It is important that the number of points subtracted is standardized; i.e., each evaluator subtracts the same number of points for the same error.

The points per asterisked entry are not entered on the Evaluation Information page. When an asterisked entry is not successfully completed, automatic failure results. A score of "0" is assigned when an automatic failure occurs.

Completing Worksheet 09

In order to complete Worksheet 09 and derive the number of points per non-asterisked entries, you will:

1. Rank order the evaluation areas.

2. Count the total entries in each evaluation area.

3. Count the asterisked entries in each evaluation area.

4. Find the number of points per evaluation area by using Appendix D.

5. Calculate the points per non-asterisked entry by using the formula on Worksheet 09.

Instructions are provided for completing each box of Worksheet 09.

Examples of Worksheet 09

Examples of Worksheet 09 are shown in Figures 17 and 18.

Worksheet 09: Scoring Criteria

Task: LOX Servicing B-52H Developer: Sample

Time/Speed	All Entries [1] (B)	+	Asterisked Entries [0] (C)	=	Enter Total in Block E		
Rank [1] (A)	Points For Time/Speed From Appendix D [9] (D)	÷	Total B + C [1] (E)	=	Points Per Non-Asterisked Entry [9] (F)		
Sequence-Following	All Entries [36] (B)	+	Asterisked Entries [0] (C)	=	Enter Total in Block E		
Rank [3] (A)	Points For Sequence-Following From Appendix D [27] (D)	÷	Total B + C [36] (E)	=	Points Per Non-Asterisked Entry [.75] (F)		
End-Product	All Entries [4] (B)	+	Asterisked Entries [0] (C)	=	Enter Total in Block E		
Rank [2] (A)	Points For End-Product From Appendix D [18] (D)	÷	Total B + C [4] (E)	=	Points Per Non-Asterisked Entry [4.5] (F)		
Safety	All Entries [50] (B)	+	Asterisked Entries [26] (C)	=	Enter Total in Block E		
Rank [4] (A)	Points For Safety From Appendix D [36] (D)	÷	Total B + C [76] (E)	=	Points Per Non-Asterisked Entry [.47] (F)		
TEM Use	All Entries [7] (B)	+	Asterisked Entries [0] (C)	=	Enter Total in Block E		
Rank [1] (A)	Points For TEM Use From Appendix D [9] (D)	÷	Total B + C [7] (E)	=	Points Per Non-Asterisked Entry [1.3] (F)		

Figure 17. Example of Completed Worksheet 09: LOX Servicing B-52H.

Worksheet 09: Scoring Criteria

Task: Preflight KC-135A Developer: Sample

Time/Speed Rank N/A (A)	All Entries -- (B)	+	Asterisked Entries -- (C)	=	Enter Total in Block E			
	Points For Time/Speed From Appendix D -- (D)	÷	Total B + C -- (E)	=	Points Per Non-Asterisked Entry -- (F)			
Sequence-Following Rank 1 (A)	All Entries 1 (B)	+	Asterisked Entries 0 (C)	=	Enter Total in Block E			
	Points For *Sequence-Following* From Appendix D 10 (D)	÷	*Total B + C* 1 (E)	=	*Points Per Non-Asterisked Entry* 10 (F)			
End-Product Rank 4 (A)	All Entries 39 (B)	+	Asterisked Entries 0 (C)	=	Enter Total in Block E			
	Points For End-Product From Appendix D 40 (D)	÷	Total B + C 39 (E)	=	Points Per Non-Asterisked Entry 1 (F)			
Safety Rank 3 (A)	All Entries 6 (B)	+	Asterisked Entries 0 (C)	=	Enter Total in Block E			
	Points For Safety From Appendix D 30 (D)	÷	Total B + C 6 (E)	=	Points Per Non-Asterisked Entry 5 (F)			
TEM Use Rank 2 (A)	All Entries 4 (B)	+	Asterisked Entries 0 (C)	=	Enter Total in Block E			
	Points For TEM Use From Appendix D 20 (D)	÷	Total B + C 4 (E)	=	Points Per Non-Asterisked Entry 5 (F)			

Figure 18. Example of Completed Worksheet 09: Preflight KC-135A.

Block A Rank

Explanation

Often, one or more of the evaluation areas are more important to task performance than others. At this point, you will rank the evaluation areas in order of their importance to successful task performance.

Purpose

One hundred points are assigned to the whole task. This total number of points is divided among the five evaluation areas. Evaluation areas that you rank higher than others will receive more points, and evaluation areas that are ranked the least important will be worth fewer points.

Appendix D contains a chart for assigning points to each evaluation area based on the combination of ranks you assign to the task.

Assigning Ranks

The evaluation areas are ranked from the least important (1) to the most important (the highest rank). You can assign any combination of ranks you think is appropriate. Two or more evaluation areas can have the same rank if they are equal in importance.

You should follow the guidelines below:

1. Assign the least important evaluation area(s) the rank of 1.

2. Assign the most important evaluation area(s) the highest rank.

3. Do not skip numbers.

4. Do not assign a rank when a evaluation area has no entries.

Guidelines for Entering Ranks

Enter the rank for each evaluation area in Block A of Worksheet 09.

Enter N/A in Block A if there are no entries for an evaluation area.

Some examples of combinations of ranks are:

Evaluation Areas	Ranks			
Time/Speed	N/A	5	1	1
Sequence-Following	3	2	2	N/A
End Product	2	1	3	1
Safety	3	3	2	2
TEM Use	1	4	2	2

Block B All Entries

Explanation

The number of entries in each evaluation area of the TEF is the first number needed to complete the formula on Worksheet 09. The total number of entries should include both asterisked and non-asterisked entries.

Counting Entries

Guidelines for counting the entries in each evaluation area are provided below:

1. Time/Speed - Each separate segment where time is evaluated is considered one entry.

2. Sequence-Following - If series are included on the TEF, each step in a series is considered one entry. For example, if a TEF included the entry Steps 2 through 10, nine entries would be counted. If single steps are included on the TEF, each last step is considered one entry. For example, if a TEF included Step 3 before Steps 9, 10, and 11, three entries would be counted.

3. End Product - Each type of criteria listed is considered one entry. For example, if two end products were included on the TEF, with the first having one type of criteria and the second having three types of criteria, four entries would be counted.

4. Safety - Each procedure or regulation included on the TEF counts as one entry. When a procedure or regulation is repeated for more than one step, it is counted as an entry every time it appears.

5. TEM Use - Each tool, equipment item, or material with its specific use, counts as one entry. When an item is repeated for more than one step, it is counted as an entry every time it appears.

Guidelines for Entering All Entries

Enter the number of entries for each evaluation area in Block B of Worksheet 09.

Block C Asterisked Entries

Explanation

The next number you need to complete the formula on Worksheet 09 is the number of asterisked entries in each evaluation area.

Guidelines for Entering Asterisked Entries

Simply enter the number of asterisked entries for each evaluation area in Block C of Worksheet 09.

Block D Points Per Evaluation Area

Explanation

A number of points will be assigned to each evaluation area based on the ranks you already entered in Block A. These points will be divided among the entries in each evaluation area to come up with the number of points per non-asterisked entries.

Assigning Points

You should use the chart in Appendix D to convert the ranks into points per evaluation area. Simply follow the flowchart until you have found the point value for each rank you assigned.

Guidelines for Entering Points Per Evaluation Area

Enter the points for each evaluation area in Block D of Worksheet 09.

Block E Total B + C

Explanation

Now you have all the numbers necessary to complete the formula on Worksheet 09. First you should add Block B (All Entries) and Block C (Asterisked Entries). Repeat this for each evaluation area.

Guidelines for Entering Total B + C

Enter the totals for Blocks B + C in Block E of Worksheet 09 for each evaluation area.

Block F Points Per Non-Asterisked Entries

Explanation

You are now ready to find the points per non-asterisked entry. For each evaluation area, simply divide Block D (Points for evaluation area) by Block E (Total B + C).

Guidelines for Entering Points Per Non-Asterisked Entry

Enter the results of dividing Block D by Block E in Block F.

YOU ARE NOW READY TO COMPLETE THE EVALUATOR INFORMATION PAGE.

COMPLETING THE EVALUATOR INFORMATION PAGE

Block K Scoring Criteria

Explanation

The last step in TEF development is to transfer the information from Blocks D and F of Worksheet 09 onto the Evaluator Information page. The information will be transferred to Block K, Scoring Criteria of the Evaluation Information page.

Purpose

When the points per non-asterisked events are included on the Evaluator Information page, the evaluator can use this information to score the evaluation.

Transferring the Scoring Criteria

Enter the points per each evaluation area from Block D of Worksheet 09 in the column labeled "Total Points Possible" in Block K of the Evaluator Information page.

Enter the number of points from Block F of Worksheet 09 in the column labeled "Points" in Block K of the Evaluator Information page.

When an evaluation area has no entries, enter N/A in each column on the Evaluator Information page.

Examples of Block K, Scoring Criteria

Building Search

EVALUATION AREA	TOTAL POINTS POSSIBLE	NUMBER ASTERISKED ERRORS	NUMBER NON-ASTERISKED ERRORS	POINTS	POINTS SUBTRACTED
Time/Speed	9		X 9 =		
Sequence-Following	27		X .75 =		
End Product	18		X 4.5 =		
Safety	36		X .47 =		
Tools, Equipment, and Materials Use	9		X 1.3 =		

Mobility Passport Processing

EVALUATION AREA	TOTAL POINTS POSSIBLE	NUMBER ASTERISKED ERRORS	NUMBER NON-ASTERISKED ERRORS	POINTS	POINTS SUBTRACTED
Time/Speed	N/A	N/A	N/A	X N/A =	N/A
Sequence-Following	10		X 1 =		
End Product	40		X 1 =		
Safety	30		X 6 =		
Tools, Equipment, and Materials Use	20		X 4 =		

YOU HAVE NOW COMPLETED THE DEVELOPMENT OF THE TASK EVALUATION FORM.

REFERENCES

Warm, R., Roth, J. T., & Fitzpatrick, J. A. (1986, May). Task evaluation form: Development procedures for non-equipment-oriented tasks (AFHRL-TP-85-56). Lowry AFB, CO: Training Systems Division, Air Force Human Resources Laboratory.

APPENDIX A

EXAMPLE COMPLETED EVALUATION FORMS

Examples of completed Forms for two tasks, LOX Servicing B-52H and Preflight Inspection KC-135A, are included in this Appendix. You will notice that there are two different types of pages. The first page of each example is titled Evaluator Information. The remaining pages of each example are titled Task Evaluation Form.

The Evaluation Information page is used by the evaluator to set-up the evaluation and to score observed performance after the evaluation is complete. The Task Evaluation Form pages are used during task performance to guide the evaluator's observations and to record errors. Specific information about the two forms is provided below.

Evaluator Information Page

Blocks A through J provide information to the evaluator about the task to be evaluated and how the task should be presented to the performer for evaluation purposes.

Block K includes a scoring chart which the evaluator completes after the task performance.

Task Evaluation Form Pages

Column 1 lists the steps of the task which will be performed for the evaluation.

Columns 2 through 7 describe what should be evaluated at each step of the task. The evaluator uses this information as standards of task performance. The evaluator circles the corresponding entries on the form when errors occur.

EVALUATOR INFORMATION

A. TASK DESCRIPTION

DATE OF DEVELOPMENT: 6/85

DEVELOPER:

AFSC/DUTY POSITION: 431X2

TASK TITLE: LOX Servicing B-52H

TASK BEGINNING: As performer positions fire extinguisher

TASK END: After extra grounding cable is disconnected

STEPS OR EVENTS NOT INCLUDED IN THE EVALUATION: Step 1, Step 2, annotating AFTO forms

B. TASK INFORMATION SOURCES

TITLE	DATE
Technical Orders IB-52H-2-2JG-1, 3	10/82
OJT Instructor's Guide No. 8506	11/82

C. EVALUATION METHOD

Actual Equipment Job Environment

D. PREVENTATIVE ENVIRONMENTAL CONDITIONS

Thunderstorms within 3 miles

E. PRESENTATION OF OPERATIONAL EQUIPMENT/TASK

Aircraft requires LOX servicing

Aircraft grounded

Aircraft not within 50 ft. of other aircraft

No servicing of fuel, oil, hydraulics, or water

Electrical power off

Personnel off aircraft

No oxygen leaks, no components removed, no purging required

F. PRESENTATION OF PERFORMER TOOLS, EQUIPMENT, AND MATERIAL

TOOLS, EQUIPMENT, MATERIAL	PRESENTATION
Minikit	All preselected for the performer
Rags	
Face Shield	
Leather Gloves with Wool Inserts	
Aprons	
Hat (non-mesh)	
Sleeves	
Extra Ground Wire	
LOX Cart	
Drip Pans	
Fire Bottle	

G. EVALUATOR TOOLS, EQUIPMENT, AND MATERIAL

Stopwatch
Face Shield
Leather Gloves with Wool Inserts
Aprons
Hat (non-mesh)
Sleeves

H. HELP PERMITTED

I. EVALUATOR TIME ESTIMATES

Time to Set-Up: 20 minutes

Time to Evaluate: 45 minutes

Time to Reset N/A

J. NUMBER OF EVALUATORS

1

K. SCORING CRITERIA

NOTE TO EVALUATOR: It is important that all evaluators score the TEF in the same way. If you have never scored a TEF or are unsure about the number of errors to enter, please see the TEF EVALUATOR INSTRUCTIONS.

EVALUATION AREA	TOTAL POINTS POSSIBLE	NUMBER ASTERISKED ERRORS[1]	NUMBER NON ASTERISKED ERRORS		POINTS		POINTS SUBTRACTED
Time/Speed	9			x	9	=	
Sequence-Following	27			x	.75	=	
End-Product	18			x	4.5	=	
Safety	36			x	.47	=	
Tools, Equipment, and Materials Use	9			x	1.3	=	

Evaluator Comments:

[1]Circle fail with a score of zero if any asterisked errors occurred.

107 100 - [ ] = [ ]

Total Points Subtracted — Score

Pass/Fail
Pass = 75-100
Fail = 0-74

TASK EVALUATION FORM

Performer _____ Task Title LOX Servicing B-52H Evaluator _____

AFSC _____ Date of Development Sample Date _____

STEP	TIME/SPEED		SEQUENCE-FOLLOWING	END PRODUCTS	SAFETY	TOOLS, EQUIPMENT, AND MATERIALS USE
1. Description	2. Start/Stop Measuring	3. Standard	4. Sequences	5. End Product Criteria	6. Procedures and Regulations	7. Item, Size or Type, Use
1 Review safety precautions						
2 Attach two cables from aircraft to static grounds.						
3 Position fire extinguisher.			Steps 3 through 38.		Fire extinguisher positioned within easy reach.	
4 Disconnect electrical power to aircraft.					Power cable disconnected and power unit outside 50 ft. radius.	
5 Position battery power switch to off.					Battery switch in off position.	
6 Ensure sufficient LOX is in service cart						
7 Position LOX service cart at far limit of hose.					LOX cart at far limit of hose.	
8 Set brakes and chock wheels of LOX cart.					Brakes set, wheels chocked on LOX cart.	
9 Attach LOX cart grounding cable to static ground.					LOX cart grounded.	
10 Ensure area around A/C vent is clean and clear.					Clean area around vent.	Rags clean, dry, used to clean.

TASK EVALUATION FORM

Performer _____ Task Title LOX Servicing B-52H Evaluator _____

AFSC _____ Date of Development Sample Date _____

STEP	TIME/SPEED		SEQUENCE FOLLOWING		END PRODUCTS	SAFETY	TOOLS, EQUIPMENT, AND MATERIALS USE
1. Description	2. Start/Stop Measuring	3. Standard	4. Sequences		5. End Product Criteria	6. Procedures and Regulations	7. Item, Size or Type, Use
11 Position clean metal drip pans and purge cart vent.						Metal drip pans positioned under overboard vent and purge fitting.	Drip pans metal, clean, positioned under overhead vents and purge fitting vent.
12 Open filler valve access doors.							Screwdrivers, correct size, rotate fasteners CCW.
13 Don protective clothing.						*Protective clothing worn.	
14 Clear personnel from vent area.						*Protective clothing worn.	
15 Position vent valve handle to fill position.						*Protective clothing worn/move handle with slow, steady motion/ personnel clear of vent. Performer stands to one side/	
16 Ensure filler valve compartment is clean and clear.						*Protective clothing worn/valve compartment clean, dry, and clear/	Rags clean, dry, used to clean.
17 Remove filler valve cap and clean filler valve.						*Protective clothing worn/filler valve clean, dry, and clear/	Rags clean, dry, used to clean.
18 Ensure cart hose nozzle and purge fittings are dry and clean.						*Protective clothing worn/cart hose nozzle and purge fitting clean, dry, and clear/	Rags clean, dry, used to clean.
19 Ensure capacity gage equalizer is open.						*Protective clothing worn/capacity gage equalizer open/	
20 Build up service cart pressure to 30± 5 psi.						*Protective clothing worn/capacity gage equalize open/monitor LOX cart pressure/	

TASK EVALUATION FORM

Performer _____ Task Title LOX Servicing B-52H _____ Evaluator _____

AFSC _____ Date of Development Sample _____ Date _____

STEP	TIME/SPEED		SEQUENCE FOLLOWING	END PRODUCTS	SAFETY	TOOLS, EQUIPMENT, AND MATERIALS USE
1. Description	2. Start/Stop Measuring	3. Standard	4. Sequences	5. End Product Criteria	6. Procedures and Regulations	7. Item Size or Type, Use
21 Check operation of cart relief valve.					Protective clothing worn/ensure valve is operational/	
22 Open service cart supply valve.					Protective clothing worn.	
23 Purge supply hose.					Protective clothing worn/monitor LOX cart pressure/solid stream of LOX flows/	
24 Close cart supply valve and depressurize hose.					Protective clothing worn/supply valve turned off while hose nozzle remains in receptacle/	
25 Connect supply hose to aircraft filter valve.					Protective clothing worn/performer stands to one side/	
26 Open service cart supply valve and maintain 30± 5 psi.	Service cart supply valve is opened.				Protective clothing worn/performer stands to one side/monitor LOX cart pressure and leaks/	
27 Close service cart supply valve.	Service cart supply valve is closed.	At least 30 seconds			Protective clothing worn/performer stands to one side/	
28 Disconnect supply hose from aircraft.					Protective clothing worn/performer stands to one side/	
29 Depressurize supply hose.					Protective clothing worn/press nozzle to relieve pressure/	
30 Replace aircraft filler valve cap.				Filler valve cap replaced.	Protective clothing worn.	

TASK EVALUATION FORM

Performer _____ Task Title LOX Servicing B-52H Evaluator _____

AFSC _____ Date of Development Sample Date _____

STEP	TIME/SPEED		SEQUENCE FOLLOWING	END PRODUCTS	SAFETY	TOOLS, EQUIPMENT, AND MATERIALS USE
1. Description	2. Start/Stop Measuring	3. Standard	4. Sequences	5. End Product Criteria	6. Procedures and Regulations	7. Item, Size or Type, Use
31 Position aircraft vent valve handle to build up position.					* Protective clothing worn/used gloved hand on handle/	
32 Close filler valve access door and secure.				Filler valve access door closed and secure.	* Protective clothing worn.	Screwdriver, correct size, secure fasteners
33 Depressure service cart.					* Protective clothing worn.	
34 Remove LOX cart from area.				LOX cart at least 50 ft. from aircraft.	* Protective clothing worn/LOX cart at least 50 ft. from aircraft, close vent while transporting, then open vent valve/	
35 Connect main external power to aircraft.						
36 Check LOX quantity gage.				LOX quantity gage reads full.		
37 Disconnect main external power from aircraft.						
38 Disconnect extra grounding cable.						

EVALUATOR INFORMATION

A. TASK DESCRIPTION

DATE OF DEVELOPMENT: 6/85

DEVELOPER:

AFSC/DUTY POSITION: 431X2

TASK TITLE: Preflight KC-135A

TASK BEGINNING: Beginning of Work Card 1-003

TASK END: End of Work Card 1-010

STEPS OR EVENTS NOT INCLUDED IN THE EVALUATION: Work Card 08 discrepancies found and servicing necessary will only be annotated (i.e., LOX Servicing, Fire Extinguisher Servicing)

B. TASK INFORMATION SOURCES

TITLE	DATE
Technical Orders K-135(K) A-2-9J6-3	3/82
OJT Instructor's Guide No. 8101	1/82

C. EVALUATION METHOD

Actual Equipment Job Environment

D. PREVENTATIVE ENVIRONMENTAL CONDITIONS

N/A

E. PRESENTATION OF OPERATIONAL EQUIPMENT/TASK

No other maintenance being performed

Aircraft requires preflight inspection

Aircraft grounded

F. PRESENTATION OF PERFORMER TOOLS, EQUIPMENT, AND MATERIAL

TOOLS, EQUIPMENT, MATERIAL	PRESENTATION
Minikit	Preselected
Tire Gage	Preselected
Tape Measure	Preselected
Work Cards	Preselected
Rags	Preselected
B-1, B-4, B-5 stands	Preselected

G. EVALUATOR TOOLS, EQUIPMENT, AND MATERIAL

Tire Gage
Work Cards

H. HELP PERMITTED

I. EVALUATOR TIME ESTIMATES

Time to Set-Up: N/A

Time to Evaluate: 45 minutes

Time to Reset: N/A

J. NUMBER OF EVALUATORS

1

K. SCORING CRITERIA

NOTE TO EVALUATOR: It is important that all evaluators score the TEF in the same way. If you have never scored a TEF or are unsure about the number of errors to enter, please see the TEF EVALUATOR INSTRUCTIONS.

EVALUATION AREA	TOTAL POINTS POSSIBLE	NUMBER ASTERISKED ERRORS†	NUMBER NON ASTERISKED ERRORS		POINTS		POINTS SUBTRACTED
Time/Speed	N/A	N/A	N/A	x	N/A	-	N/A
Sequence Following	10			x	1	-	
End Product	40			x	1	-	
Safety	30			x	6	-	
Tools, Equipment, and Materials Use	20			x	4	-	

Evaluator Comments

†Circle fail with a score of zero if any asterisked errors occurred

112 100 - [ ] - [ ]

Total Points Score

Pass/Fail
Pass = 75 100
Fail = 0 74

TASK EVALUATION FORM

Performer _____ Task Title Preflight KC-135A Evaluator _____

AFSC _____ Date of Development Sample Date _____

STEP	TIME/SPEED		SEQUENCE-FOLLOWING	END-PRODUCTS	SAFETY	TOOLS, EQUIPMENT, AND MATERIALS USE
1. Description	2. Start/Stop Measuring	3. Standard	4. Sequences	5. End Product Criteria	6. Procedures and Regulations	7. Item, Size or Type, Use
1 Test fuel quantity gages.	N/A		1 before 23.	Fuel quantity gages within safe limit.	Ensure correct center of gravity.	
2 Check pitot tubes, check angle of attack, check static boom tubes.				Pitot tubes, angle of attack, static boom tubes operational/ not clogged/	Check pitot tube heat with back of hand.	
3 Check rendevous beacon lights for operation.				Beacon lights operational	Lock wheels of stand with all available brakes and install platform pins.	Scand, B-4, lock wheels with all available brakes, install platform pins.
4 Check navigation lights for operation.				Navigation lights operational		
5 Check LOX quantity gage reading.				LOX quantity gage reads at least 6 liters.		
6 Depressurize and check hydraulic quantity gage.				Hydraulic quantity gage reads at least 4.5 gallons.		
7 Close circuit breakers: engine fuel flow and EPR indicators.				Engine fuel flow C.B. and EPR C.B. closed.		
8 Check boom nozzle light bulb for operation.				Boom nozzle light bulb operational		
9 Check portable fire extinguisher.				Fire extinguisher properly secured.		
10 Check foward chinning bar safety pin installed.				Forward chinning bar pin installed.		

TASK EVALUATION FORM

Performer _____ Task Title Preflight KC-135A _____ Evaluator _____

AFSC _____ Date of Development Sample _____ Date _____

STEP	TIME/SPEED		SEQUENCE-FOLLOWING	END PRODUCTS	SAFETY	TOOLS; EQUIPMENT, AND MATERIALS USE
1. Description	2. Start/Stop Measuring	3. Standard	4. Sequences	5. End Product Criteria	6. Procedures and Regulations	7. Item, Size or Type, Use
11 Check portable oxygen cylinders for operation, pressure, and stowed.				Portable oxygen cylinders regulators operational/ stowed/ pressure 280 psi minimum/	Hands clean of oil and grease.	
12 Check nose gear inspection window.				Nose gear inspection window clean.		
13 Check taxi lights.				Taxi lights operational.		
14 Check landing lights.				Landing lights operational.		
15 Check pilot and co-pilot windows.				Pilot and co-pilot windows clean.	Lock wheels of stand with all available brakes and install platform pins.	Stand, B-4, lock wheels with all available brakes, install platform pins.
16 Cargo Compartment: Check portable oxygen cylinders for operation, pressure, and stowed.				Portable oxygen cylinders regulators operational/ stowed/ pressure 280 psi minimum/	Hands clear of oil and grease.	
17 Check portable fire extinguisher properly secured.				Portable fire extinguisher stowed/ properly serviced/		
18 Check gaseous oxygen system serviced.				Gaseous oxygen 400 - 425 psi.		
19 Check main gear and flap emergency crank stowed.				Main gear and flap emergency crank stowed.		
20 Check main gear inspection window.				Main gear inspection window clean		

TASK EVALUATION FORM

Performer _____ Task Title Prefight KC-135A Evaluator _____

AFSC _____ Date of Development Sample Date _____

STEP	TIME/SPEED		SEQUENCE FOLLOWING	END PRODUCTS	SAFETY	TOOLS, EQUIPMENT, AND MATERIALS USE
1. Description	2. Start/Stop Measuring	3. Standard	4. Sequences	5. End Product Criteria	6. Procedures and Regulations	7. Item, Size or Type, Use
21 Check escape spoiler air supply bottle properly serviced.				Escape spoiler air support properly serviced.		
22 Check AIMS static system drained of moisture.				AIMS static system no moisture in trap.		
23 Check nose gear strut for proper extension				Nose gear strut propr extension.		Tape measure, standard, measure distance between gland nut and strut bottom.
24 Check nose gear tires.				Nose gear tires proper inflation/ no evidence of wear and damage/		Tire gage, standard, insert tape gage onto valve stem and push down smoothly.
25 Check static ports for obstruction.				Static ports clean and unobstructed.		
26 Visually inspect lower fuselage for fuel or hydraulic leaks.				Lower fuselage no fuel or hydraulic leaks.		
27 Inspect fuselage for accumulation of water or fuel.				Fuselage no accumulation of water or fuel beyond allowed limit.		

APPENDIX B

BLANK WORKSHEETS

Worksheet 01: Task Steps	
Task:	Developer:
Column A: #	Column B: Step Description

Worksheet 02: Task Definition

Task: Developer:

Line A AFSC/Duty Position: _____

Line B Task Title: _____

Line C Task Beginning: _____

Line D Task End: _____

Block E Steps or Events not Included in the Evaluation

_____

_____

_____

_____

_____

Block F Task Information Sources

Title	Date

Worksheet 03: *Evaluation of Time or Speed of Task Performance*

Task: Developer:

Column A Critical Segments	Block B Starting Point	Block C Stopping Point	Block D Standard

Worksheet 04: Evaluation of Sequence-Following

Task: _____ Developer: _____

Block A Series of Steps

Step ____ through ____

Step ____ through ____

Step ____ through ____

Step ____ through ____

Step ____ through ____

Block B Single Steps

Step ____ before Step(s) _____

Step ____ before Step(s) _____

Step ____ before Step(s) _____

Step ____ before Step(s) _____

Step ____ before Step(s) _____

Worksheet 05: Evaluation of End Product

Task: Developer:

Column A End Products	Column B Criteria	Column C Step

Worksheet 06: Evaluation of Safety Procedures and Regulations

Task: Developer:

Column A Safety Procedures and Regulations	Column B Steps

Worksheet 07: Evaluation of Tools, Equipment, and Materials Use

Task: Developer:

Column A Tools, Equipment and Materials Use	Column B Size/Type	Column C Correct Use	Column D Steps

Worksheet 08: Evaluation Scenario

Task: Developer:

Line A Evaluation Method:

Block B Preventative Environmental Conditions

Block C Presentation of Operational Equipment/Task

Block D Help Permitted

Block E Presentation of Performer Tools, Equipment, and Materials

Tools, Equipment, and Materials	Presentation

Block F Evaluator Equipment

Block G Evaluator Time Estimates

Time to set up _____
Time to evaluate _____
Time to reset _____

Block H Number of Evaluators _____

Worksheet 09: Scoring Criteria

Task: _____ Developer: _____

Time/Speed	All Entries [ ] B	+	Asterisked Entries [ ] C	=	Enter Total in Block E		
Rank [ ] A	Points For Time/Speed From Appendix D [ ] D	÷	Total B + C [ ] E	=	Points Per Non-Asterisked Entry [ ] F		
Sequence-Following	All Entries [ ] B	+	Asterisked Entries [ ] C	=	Enter Total in Block E		
Rank [ ] A	Points For Sequence-Following From Appendix D [ ] D	÷	Total B + C [ ] E	=	Points Per Non-Asterisked Entry [ ] F		
End-Product	All Entries [ ] B	+	Asterisked Entries [ ] C	=	Enter Total in Block E		
Rank [ ] A	Points For End-Product From Appendix D [ ] D	÷	Total B + C [ ] E	=	Points Per Non-Asterisked Entry [ ] F		
Safety	All Entries [ ] B	+	Asterisked Entries [ ] C	=	Enter Total in Block E		
Rank [ ] A	Points For Safety From Appendix D [ ] D	÷	Total B + C [ ] E	=	Points Per Non-Asterisked Entry [ ] F		
TEM Use	All Entries [ ] B	+	Asterisked Entries [ ] C	=	Enter Total in Block E		
Rank [ ] A	Points For TEM Use From Appendix D [ ] D	÷	Total B + C [ ] E	=	Points Per Non-Asterisked Entry [ ] F		

APPENDIX C

BLANK EVALUATION FORMS

EVALUATOR INFORMATION

A. TASK DESCRIPTION

DATE OF DEVELOPMENT: DEVELOPER:

AFSC/DUTY POSITION:

TASK TITLE:

TASK BEGINNING:

TASK END:

STEPS OR EVENTS NOT INCLUDED IN THE EVALUATION:

B. TASK INFORMATION SOURCES

TITLE	DATE

C. EVALUATION METHOD

D. PREVENTATIVE ENVIRONMENTAL CONDITIONS

E. PRESENTATION OF OPERATIONAL EQUIPMENT/TASK

F. PRESENTATION OF PERFORMER TOOLS, EQUIPMENT, AND MATERIAL

TOOLS, EQUIPMENT, MATERIAL	PRESENTATION

G. EVALUATOR TOOLS, EQUIPMENT, AND MATERIAL

H. HELP PERMITTED

I. EVALUATOR TIME ESTIMATES

Time to Set-Up: _____

Time to Evaluate: _____

Time to Reset _____

J. NUMBER OF EVALUATORS

K. SCORING CRITERIA

NOTE TO EVALUATOR: It is important that all evaluators score the TEF in the same way. If you have never scored a TEF or are unsure about the number of errors to enter, please see the TEF EVALUATOR INSTRUCTIONS.

EVALUATION AREA	TOTAL POINTS POSSIBLE	NUMBER ASTERISKED ERRORS†	NUMBER NON-ASTERISKED ERRORS	POINTS	POINTS SUBTRACTED
Time/Speed			x	=	
Sequence-Following			x	=	
End Product			x	=	
Safety			x	=	
Tools, Equipment, and Materials Use			x	=	

Evaluator Comments:

†Circle fail with a score of zero if any asterisked errors occurred.

127

100 − [ ] = [ ]

Total Points Subtracted — Score

Pass/Fail
Pass = 75-100
Fail = 0-74

TASK EVALUATION FORM

Performer _____ Task Title _____ Evaluator _____

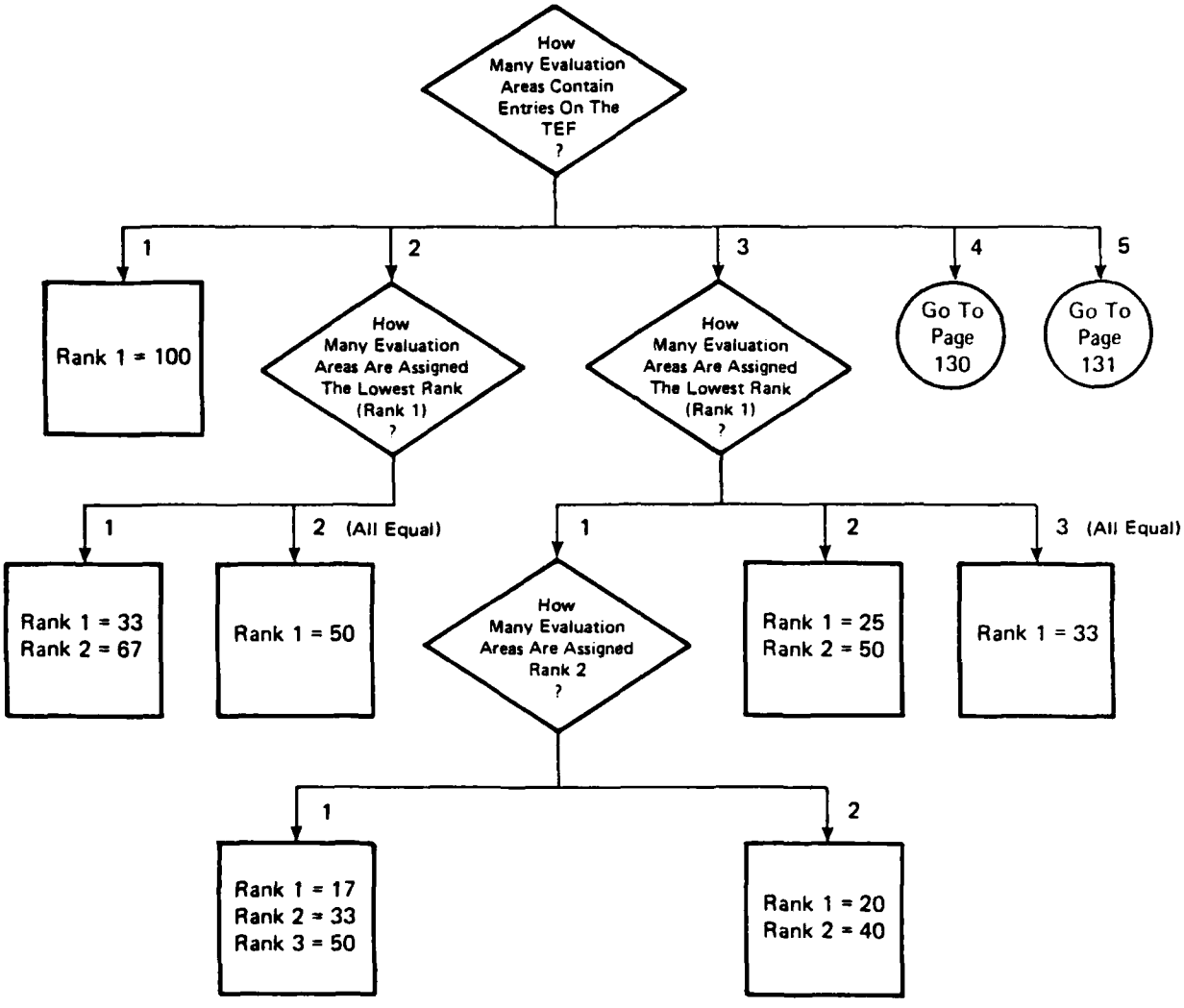
AFSC _____ Date of Development _____ Date _____

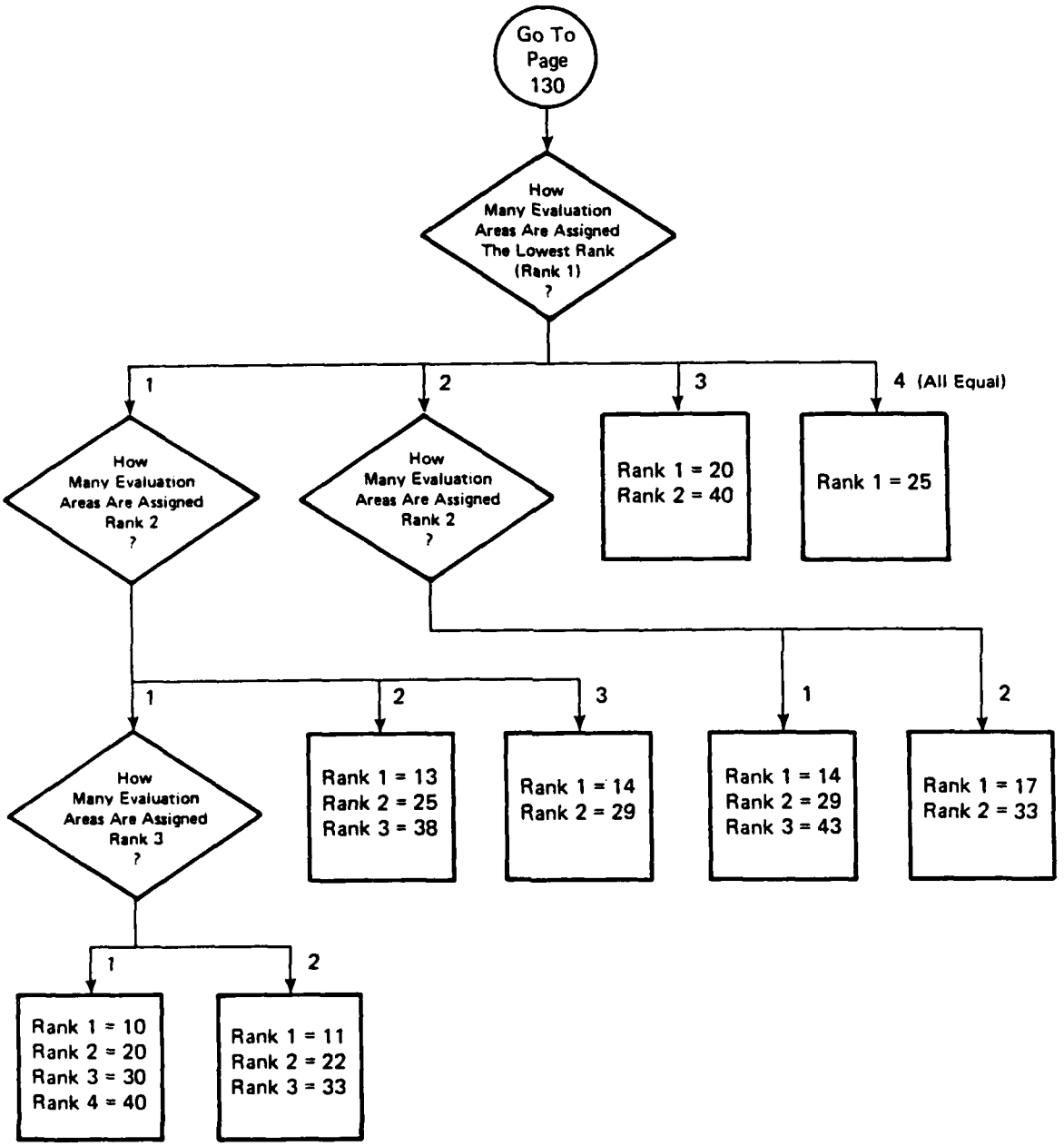
Page _____ of _____

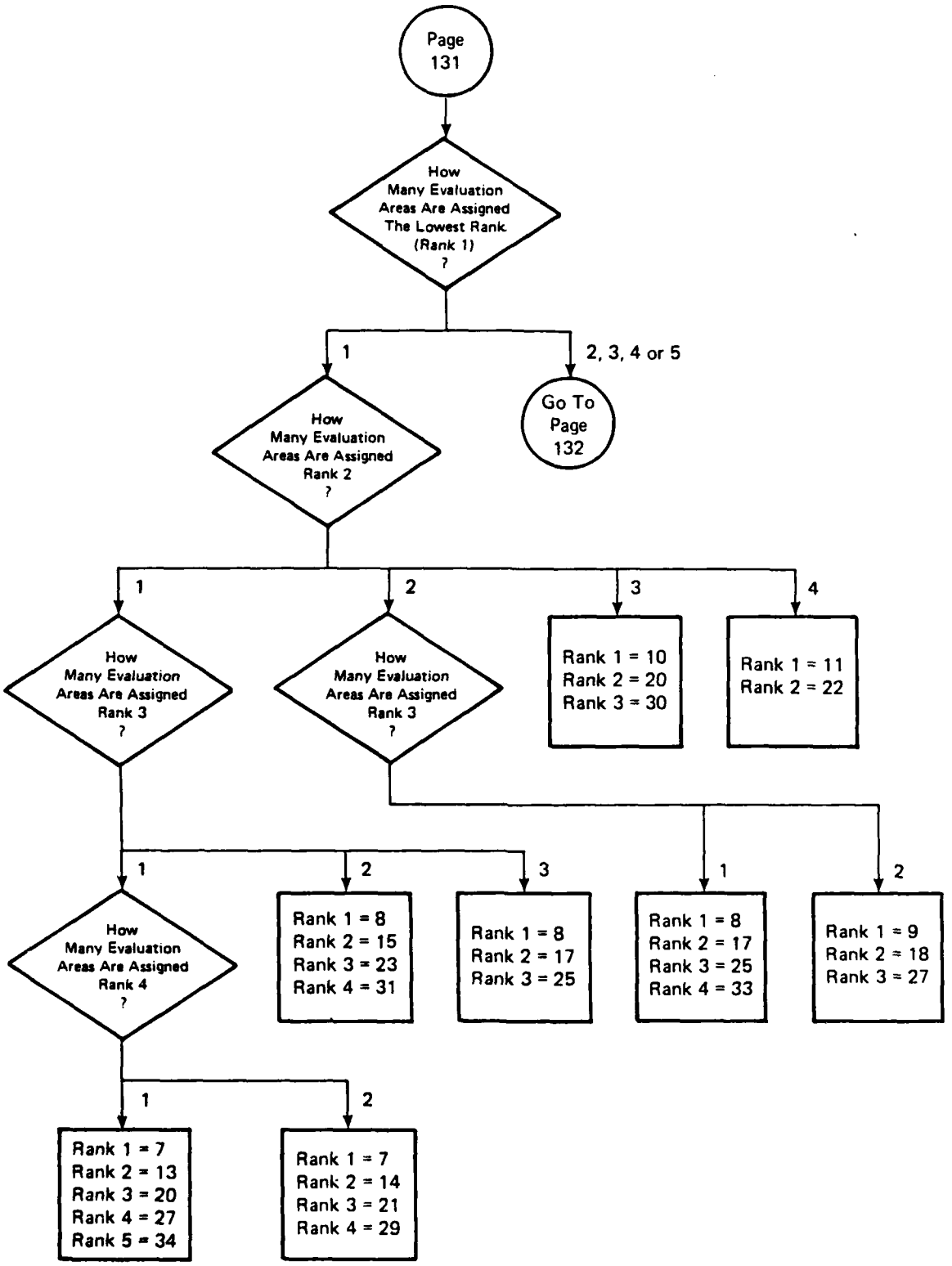
STEP	TIME/SPEED		SEQUENCE-FOLLOWING	END PRODUCTS	SAFETY	TOOLS, EQUIPMENT, AND MATERIALS USE
1. Description	2. Start/Stop Measuring	3. Standard	4. Sequences	5. End Product Criteria	6. Procedures and Regulations	7. Item, Size or Type, Use

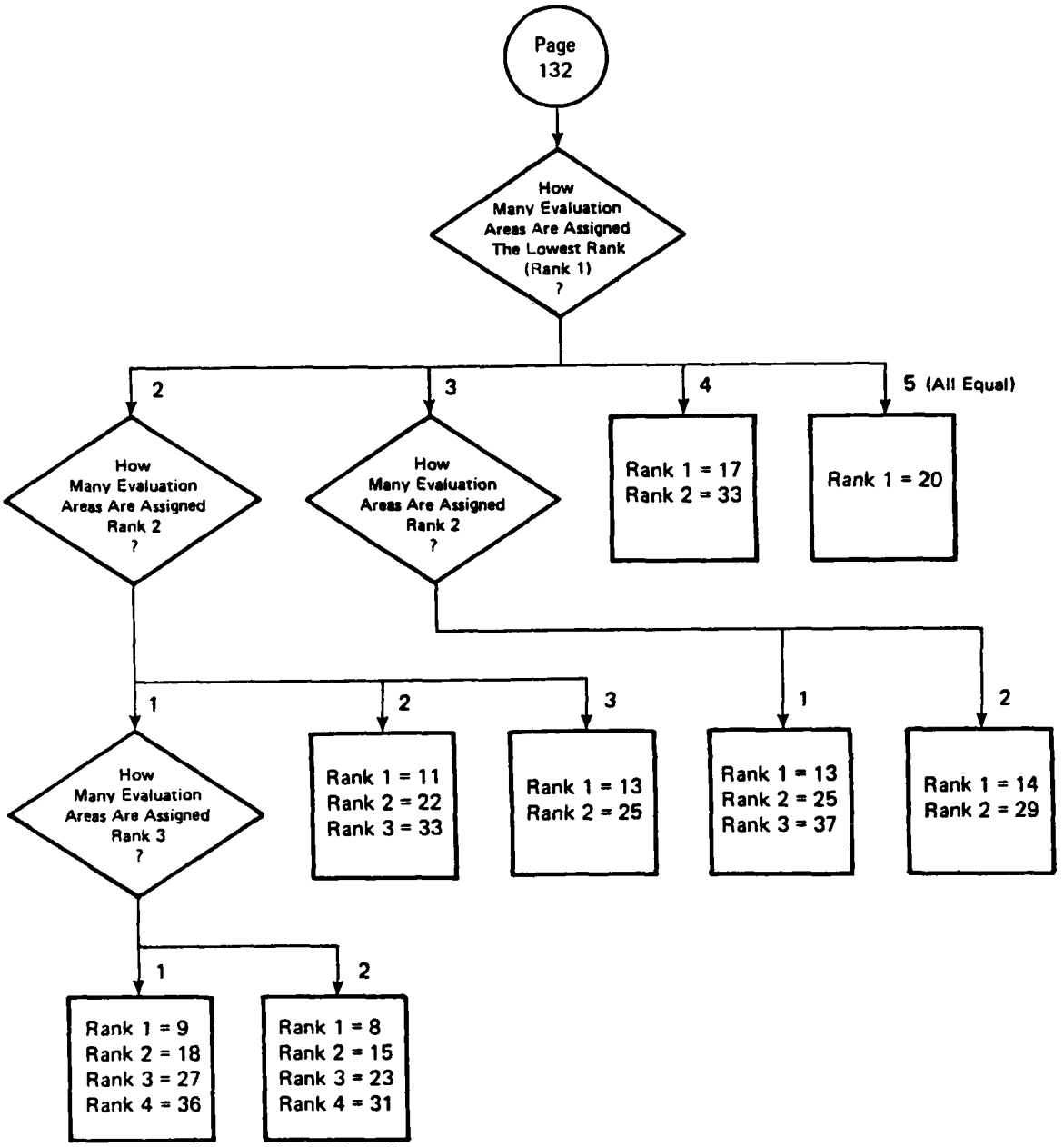
APPENDIX D

CHART FOR DETERMINING POINTS PER EVALUATION AREA


How Many Evaluation Areas Contain Entries On The TEF ?
1
2
3
4
5
Rank 1 = 100
How Many Evaluation Areas Are Assigned The Lowest Rank (Rank 1) ?
How Many Evaluation Areas Are Assigned The Lowest Rank (Rank 1) ?
Go To Page 130
Go To Page 131
1
2 (All Equal)
1
2
3 (All Equal)
Rank 1 = 33 Rank 2 = 67
Rank 1 = 50
How Many Evaluation Areas Are Assigned Rank 2 ?
Rank 1 = 25 Rank 2 = 50
Rank 1 = 33
1
2
Rank 1 = 17 Rank 2 = 33 Rank 3 = 50
Rank 1 = 20 Rank 2 = 40


Go To Page 130
How Many Evaluation Areas Are Assigned The Lowest Rank (Rank 1) ?
1
2
3
4 (All Equal)
How Many Evaluation Areas Are Assigned Rank 2 ?
How Many Evaluation Areas Are Assigned Rank 2 ?
Rank 1 = 20
Rank 2 = 40
Rank 1 = 25
1
2
3
1
2
How Many Evaluation Areas Are Assigned Rank 3 ?
Rank 1 = 13
Rank 2 = 25
Rank 3 = 38
Rank 1 = 14
Rank 2 = 29
Rank 1 = 14
Rank 2 = 29
Rank 3 = 43
Rank 1 = 17
Rank 2 = 33
1
2
Rank 1 = 10
Rank 2 = 20
Rank 3 = 30
Rank 4 = 40
Rank 1 = 11
Rank 2 = 22
Rank 3 = 33


Page 131
How Many Evaluation Areas Are Assigned The Lowest Rank (Rank 1) ?
1
2, 3, 4 or 5
Go To Page 132
How Many Evaluation Areas Are Assigned Rank 2 ?
1
2
3
4
How Many Evaluation Areas Are Assigned Rank 3 ?
How Many Evaluation Areas Are Assigned Rank 3 ?
Rank 1 = 10
Rank 2 = 20
Rank 3 = 30
Rank 1 = 11
Rank 2 = 22
1
2
3
1
2
How Many Evaluation Areas Are Assigned Rank 4 ?
Rank 1 = 8
Rank 2 = 15
Rank 3 = 23
Rank 4 = 31
Rank 1 = 8
Rank 2 = 17
Rank 3 = 25
Rank 1 = 8
Rank 2 = 17
Rank 3 = 25
Rank 4 = 33
Rank 1 = 9
Rank 2 = 18
Rank 3 = 27
1
2
Rank 1 = 7
Rank 2 = 13
Rank 3 = 20
Rank 4 = 27
Rank 5 = 34
Rank 1 = 7
Rank 2 = 14
Rank 3 = 21
Rank 4 = 29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How Many Evaluation Areas Are Assigned The Lowest Rank (Rank 1) ?
2
3
4
5 (All Equal)
How Many Evaluation Areas Are Assigned Rank 2 ?
How Many Evaluation Areas Are Assigned Rank 2 ?
Rank 1 = 17
Rank 2 = 33
Rank 1 = 20
1
2
3
1
2
How Many Evaluation Areas Are Assigned Rank 3 ?
Rank 1 = 11
Rank 2 = 22
Rank 3 = 33
Rank 1 = 13
Rank 2 = 25
Rank 1 = 13
Rank 2 = 25
Rank 3 = 37
Rank 1 = 14
Rank 2 = 29
1
2
Rank 1 = 9
Rank 2 = 18
Rank 3 = 27
Rank 4 = 36
Rank 1 = 8
Rank 2 = 15
Rank 3 = 23
Rank 4 = 31

END

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