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14. ABSTRACT The materiel in this TOP is intended for use in the receipt inspection of CB materiel and systems tested by the U.S. Army Test and Evaluation Command (ATEC). The TOP provides guidance on how to plan and conduct receipt inspection. The TOP provides specific procedures and data collection sheets.						
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U.S. ARMY TEST AND EVALUATION COMMAND
TEST OPERATIONS PROCEDURE

*Test Operations Procedure 08-2-500A
DTIC AD No.

31 August 2017

RECEIPT INSPECTION OF CHEMICAL-BIOLOGICAL (CB) MATERIEL

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1. SCOPE.

1.1 Purpose.

a. This Test Operations Procedure (TOP) outlines receipt inspection procedures for initial inspection, marking, labeling, and processing of all chemical and biological (CB) materiel received at a test agency for the execution of a test. Materiel is defined as the test items or system(s) under test (SUT) for the purposes of this TOP. This TOP is intended to guide the development of the detailed test plan (DTP).

b. This TOP provides the current standard for the planning and conduct of receipt inspections. The procedures may require modification for unique items or materials or to satisfy specific testing requirements as specified in test program documentation. Procedures will be altered only after full consideration of any possible effects on the reliability and validity of the data to be obtained. Such alterations will be coordinated among all concerned organizations in advance of any testing. Any alterations of procedures or deviations from this TOP will be accounted for in the test plan.

1.2 Limitations.

This TOP is limited to currently approved standards, methods, and procedures. Development in practices, equipment, and analysis may necessitate new procedures. Additionally, test methods and standards must be adjusted as technologies advance. As a result, test procedures and parameters listed in this TOP will require updating to accommodate any of the aforementioned changes that may occur. Any updates should be described in the specific DTP.

2. FACILITIES AND INSTRUMENTATION.

Receipt inspection may not require special facilities. Receipt inspection may take place at a testing site.

2.1 Facilities.

<u>Item</u>	<u>Requirement</u>
Shop or suitable building equipped with materiel handling equipment, hand tools, and repacking equipment.	Must allow for the unpacking, repacking, and storage of test items for SUT test procedures. This requirement may be needed when damaged SUTs have to be returned.

2.2 Equipment and Instrumentation.

The table in this section contains a list of measuring devices (equipment and instrumentation) and their parameters for receipt inspection procedures. If not otherwise specified, a precision of one percent of the quantity measured is recommended as a permissible error of measurement for the devices listed

<u>Parameter</u>	<u>Measuring Device</u>	<u>Permissible Measurement Uncertainty</u>
Air temperature (-20 to 50 °Celsius (°C)).	Thermocouple with digital recording capability.	± 0.5 °C.
Relative Humidity (0 to 90 percent).	Humidity probe with digital recording capability.	± 5 percent.
Photographs.	Digital still color camera.	Adequate resolution to document typical receipt inspection procedures.
Video.	Digital video camera.	Adequate resolution and frames/second speed to document typical receipt inspection procedures.
Measure physical attributes of SUTs (length, width, height, volume).	Physical measuring devices (measuring tapes, ruler, micrometers, etc.) graduated in metric units.	Adequate accuracy to document typical receipt inspection procedures listed in the DTP.
Weights of test items.	Weighing devices, graduated in metric units.	Adequate accuracy to document typical receipt inspection procedures listed in the DTP.

3. REQUIRED TEST CONDITIONS.

3.1 Preparations for Test.

3.1.1 Documentation.

Test plan, data collection sheets, technical manuals (TMs), operating manuals (OMs), training, preparation and storage procedures, labeling, and marking for chain of custody (COC) of samples and reagents must be reviewed, if available, to ensure that all documentation requirements are fulfilled. During the planning phase and before and during testing, the test officer will have as much pertinent documentation available as possible, including the following:

- a. Government and manufacturer's publications, including the current safety data sheet (SDS) for any chemicals.
- b. Program-specific requirements documents, such as the capability development document and system performance specification.
- c. System evaluation plan.

- d. Safety assessment report.
- e. Test planning or execution directive.
- f. Event design plan.
- g. System support package (SSP) and SSP list.
- h. Other documentation as necessary (e.g., DTPs, TOPs, standing operating procedures (SOPs), calibration data, quality assurance/quality control (QA/QC) plans).

3.1.2 Familiarization.

- a. Ensure that test participants are thoroughly familiar with items to be tested, test procedures, test diagnostic equipment, precautions to be observed, TMs, OMs, and other pertinent government, developing agency, and manufacturer's publications.
- b. Ensure that pertinent test documentation (approved DTP, basic issue item list, SSP list, SOP, etc.) is available at the work site for ready reference, if needed.
- c. Test personnel must familiarize themselves with the relevant SOPs and other procedures for applicability, completeness, and adequacy. These documents will be updated as required.
- d. Applicable regulations for safety, surety, and security will be followed.

3.1.3 Training.

Test personnel must be trained in the use of the SUTs, performance of test scenarios, and understanding of test conditions.

3.1.4 Environmental Compliance.

Test personnel and participants must receive and understand environmental documentation before the test begins.

3.2 Safety.

3.2.1 General.

- a. Ensure that all SOPs, safety directives, safety requirements, and SDSs pertaining to the SUT are followed.
- b. All test operators must read and indicate that they understand the SOP and test-specific procedures outlined in the test plan.

- c. The required SDS, testing protocols, and safety procedures will be available at the test site.
- d. When appropriate, the test participants and personnel will wear required personal protective equipment as documented in the DTP.
- e. Test personnel will be informed of potential safety and health hazards involved in test conduct and the precautions required to prevent accidents.
- f. Daily safety checks and briefings will be conducted to ensure that all identified safety hazards have been addressed before testing proceeds.
- g. For tests that involve carrying or lifting, test personnel and participants will be instructed in the proper lifting procedures.

3.3 Quality Assurance (QA) and Quality Control (QC).

3.3.1 General.

Data should be traceable, repeatable, and reproducible.

3.3.2 QA System.

Test site QA/QC procedures will be followed.

3.4 Provisioning.

- a. Procurement of necessary storage packaging materials.
- b. Designation of storage locations to maintain separation, configuration, and security of SUTs.
- c. Prepare COC documentation.

4. TEST PROCEDURES.

4.1 Receipt Inspection Preparation Procedures.

4.1.1 Instrumentation Setup and Calibration.

- a. Scheduled calibration and preventive maintenance will be performed on all instrumentation. Instruments should be operated in accordance with (IAW) the manufacturer recommendation.

b. Installation, calibration, maintenance, and any instrumental failures will be documented.

4.1.2 Inspection Area Setup.

a. The inspection should be carried out in a clean and secure environment.

b. Environmental conditions will be recorded (as required).

4.2 Receipt Inspection Procedures.

All SUTs received will be inspected for packaging integrity before testing. Visual inspection will be conducted to verify that the SUT received is intact and shows no evidence of tampering. The packaging will also be examined for any indications of damage. The packaging material type, condition, and identifying information will be recorded.

4.2.1 Visual Inspection.

a. Visually inspect each container and record the type of container, damage, closure, and markings. There may be intermediate packages within containers. If so, repeat this unpacking procedure for each item unpacked.

b. Take photographs (with scale), as appropriate. The following should be observed when taking photographs for any receipt inspection procedure:

(1) Take sufficient photographs (preferably color) to thoroughly document the inspection procedures. Include a scale (metric) in all photographs to show dimensions of the test item, as-received condition, damage sustained, etc. The scale must be labeled so that dimensions can be determined from the photograph. When applicable, obtain enough photographs so that repacking can be duplicated to the as-received condition. If the identification number of a particular test item does not show in the photograph (because of photographic angle required to show damage, for instance), include a placard showing the number. Include labels in all photographs to show major components, when feasible.

(2) Use care when taking photographs. Avoid photographs which are cluttered, unprofessional, and/or difficult to interpret. Remove all extraneous materiel from the vicinity of the item and get as close to the item as practical. If background materiel (such as a drop cloth) is needed, the materiel must be clean and free of markings.

c. If packages are hermetically sealed, or otherwise packed to preclude repacking to the as-received condition, randomly select a statistically valid sample size (consult statistician and customer) for receipt inspection; reserve the remainder for package tests specified in the DTP.

d. If the packaging has anti-tamper labels or devices that must be violated to complete receipt inspection, annotate the presence of the labels or devices and that they were violated or removed.

e. While unpacking, compare the number and type(s) of intermediate packages with the packing list. Evaluate the unpacking and storage instructions. Note type and condition of blocking, bracing, and cushioning materials.

f. Segregate any damaged packages without further unpacking them.

g. Retain all packing, blocking, bracing, and cushioning materials.

4.2.2 Damaged Items.

a. Any damaged packages that have been encountered should be segregated and unpacked as follows:

(1) Before further unpacking, photograph the damage as first observed.

(2) If the SUT contains radioactive material, notify the test site safety officer to determine the proper course of action.

(3) Mark each item for identification.

(4) Complete unpacking.

(5) Measure and record physical data.

(6) Clean the item as necessary.

(7) Photograph (with scale), as appropriate.

b. The test officer, in coordination with the customer, will make a decision on whether or not the damaged item would be suitable for testing.

- NOTES:**
1. Items in sealed packages or containers in apparently good condition (not opened during this test) may be found to be damaged when opened during later tests. Any such damage (including date found and circumstances) should be recorded for inclusion in the test report.
 2. Damages, shortages, and missing parts must be reported to the customer as soon as possible.

c. Test Item Identification.

(1) Each test item should be assigned a unique test item control number (TICN) and recorded on the COC documentation. The TICN can be generated during test preparation as sequential alphanumeric codes that identify the specific test item. Alternatively, the manufacturer's serial number may be used as the TICN. The TICN must be permanently marked or attached to the test item and will be used for tracking from initial receipt through all testing.

(2) Ensure that proper records are kept of packages/items within outer packages/containers, with photographs as appropriate.

4.2.3 Repacking.

a. SUTs or their components will be repacked (if required) and stored as needed. Reuse original packing and filling material or similar material when the original is not usable or is of insufficient quantity.

b. Repacking for environmental testing must be returned to as-received condition with particular emphasis on moisture barrier protection.

c. Mark or label the repacked container with appropriate identification and instructions.

4.2.4 Storage.

Some SUTs may have specific storage requirements. These SUTs must be stored IAW these requirements before and after receipt inspection or when not in use. When removed from storage, visually inspect again, record, and then photograph any damage to the packaging or SUTs.

4.3 Functional Tests.

Record all data generated from the functional tests prescribed in the DTP. These data must be adequate to state whether the SUT(s) meet(s) acceptance criteria. Observe all safety precautions.

5. DATA REQUIRED.

5.1 General.

The data collection sheet in Appendix A is available to aid in the collection of required data.

5.2 Instrument Setup and Calibration Data.

Calibration information for the receipt inspection instrumentation will be recorded on the data sheet.

5.3 Test Area Setup Data.

a. Description of receipt inspection location.

b. Environmental conditions including temperature and humidity.

5.4 Receipt Inspection Data.

a. Visual Inspection.

- (1) Type of container: cardboard, wood, metal, other; explain as needed.
- (2) Date and time receipt inspection starts and stops.
- (3) Description of condition: good, broken, contaminated, corroded, cracked, crushed, dented, leaking, punctured, spilled, other; explain as necessary.
- (4) Closures on the packaging: bolts, hooks, nails, screws, strapping, tape, other.
- (5) Markings/labeling: adequate, legible, IAW Military Standard (MIL-STD)-129R^{1**} and TM 38-250², with comments as appropriate, national stock number (NSN), nomenclature, type, model, serial number, date of manufacture, manufacturer, weight, and cube (height, width, and length).
- (6) Photographs (with scale), as appropriate.
- (7) Number of intermediate packages.
- (8) Packing list presence.
- (9) Inventory of intermediate packages against packing list and report of overages or shortages.
- (10) Presence of unpacking instructions.
- (11) Presence of storage instructions.
- (12) Notes concerning type and condition of blocking, bracing, and cushioning materiel.
- (13) Physical data (for both operational and transit configurations): length, width, height, cube, and weight; other significant dimension (describe), and volume, if necessary.

b. Actual Test Items.

- (1) Record details of identification numbers of test items allocated to the various phases of testing, and serial numbers of items repacked in intermediate packages and shipping containers.
- (2) Ensure that proper records are kept of packages/items within outer packages/containers, with photographs as appropriate.

^{**} Superscript numbers correspond to Appendix C, References.

(3) Assign, mark, and record unique test identification control numbers to test items. This may include ancillary equipment or components as outlined in the DTP.

(4) If the test item requires assembly, record this information on the data collection form.

c. Functional Test. Record the results of any function check as prescribed in the DTP.

d. Repacking.

(1) Identification numbers of any opened packages.

(2) Type and quantity of materiel required to fill and repack the container to the original level.

(3) Identification numbers, nomenclature, serial numbers, and/or lot numbers of items repacked in each container.

(4) Markings used for identification and disposition instructions.

(5) When quantities of the SUT are scheduled for storage surveillance testing, repack the items as similar to the as-received condition as possible.

e. Storage.

(1) Location of storage and environmental conditions during storage.

(2) Condition of the item when removed from storage.

6. PRESENTATION OF DATA.

Present results of receipt inspection of the SUT using narrative, tables, graphs, diagrams, and photographs as appropriate. An example of a data collection sheet is provided in Appendix A.

APPENDIX A. DATA COLLECTION SHEET.

TABLE A-1. SAMPLE RECEIPT INSPECTION DATA COLLECTION SHEET

RECEIPT INSPECTION		Date:
(Complete this form for each container and SUT. Enter all applicable fields.)		
ADSS No:	Subtest No:	Test Item Identification No:
Location:	Project Officer:	
a. Container type: Cardboard ☐ Metal ☐ Wood ☐ Other ☐ Explain:		
b. Number of items per container or package:		
c. Damage: Yes ☐ No ☐		
d. Intermediate packages inventoried against packing list? Yes ☐ No ☐		
e. Type of Damage: Broken ☐ Contaminated With Foreign Materiel ☐ Corroded ☐ Cracked ☐ Crushed ☐ Dented ☐ Leaking ☐ Punctured ☐ Spilled ☐ Other ☐ Explain:		
NOTE: Segregate any damaged packages, do not unpack. See damaged items procedures.		
f. Closure: Bolts ☐ Hooks ☐ Nails ☐ Screws ☐ Strapping ☐ Tape ☐ Other ☐ Explain:		
g. Blocking: Yes ☐ No ☐ Bracing: Yes ☐ No ☐ Cushioning Material: Yes ☐ No ☐		
Type: Plastic ☐ Wood ☐ Other ☐ Describe:		
h. Marking: Adequate ☐ Illegible ☐ Legible ☐ IAW MIL-STD-129 ☐ IAW TM 38-250 ☐		
Comments:		
i. Marking/Labeling information: NSN:		Model:
Nomenclature:		
Serial No:		Date of Manufacture:
Name of Manufacturer:		
j. Length (cm):		Height (cm):
Width (cm):	Cube (m ³):	Weight (kg):
k. SUTs were checked to ensure that they are properly assembled: Yes ☐ No ☐ Explain:		
l. Brief description of item [attach diagram(s) of the item]:		
n. Results of SUT function check:		
Submitted by: _____		
(Signed)		(Printed)

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APPENDIX B. ABBREVIATIONS.

ATEC	U.S. Army Test and Evaluation Command
°C	degree Celsius
CB	chemical and biological
COC	chain-of-custody
DTP	detailed test plan
IAW	in accordance with
MIL-STD	Military Standard
NSN	national stock number
OM	operating manual
QA	quality assurance
QC	quality control
SDS	safety data sheet
SOP	standard operating procedure
SSP	system support package
SUT	system under test
TICN	test item control number
TM	technical manual
TOP	Test Operations Procedure

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APPENDIX C. REFERENCES.

1. MIL-STD-129R, Military Standard Marking for Shipment and Storage, 18 February 2014.
2. TM 38-250, Preparing Hazardous Materials for Military Air Shipment, 15 April 2007.

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