



## DoD INSTRUCTION 4540.07

# OPERATION OF THE DoD ENGINEERING FOR TRANSPORTABILITY AND DEPLOYABILITY PROGRAM

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**Originating Component:** Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics

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**Approved by:** Paul D. Peters, Performing the Duties of the Assistant Secretary of Defense for Logistics and Materiel Readiness

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**Purpose:** This issuance implements policies, establishes procedures, and assigns responsibilities for operating the DoD Engineering for Transportability and Deployability Program in accordance with the authority in DoD Directives (DoDDs) 5134.01 and 4510.11.

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## **SECTION 1: GENERAL ISSUANCE INFORMATION**

**1.1. APPLICABILITY.** This issuance applies to OSD, the Military Departments, the Office of the Chairman of the Joint Chiefs of Staff and the Joint Staff, the Combatant Commands, the Office of the Inspector General of the Department of Defense, the Defense Agencies, the DoD Field Activities, and all other organizational entities within the DoD (referred to collectively in this issuance as the “DoD Components”).

**1.2. POLICY.** In accordance with DoDD 4510.11, it is DoD policy that DoD Components will ensure the incorporation of safe, efficient, and effective transportability engineering designs and features into all DoD equipment, in order to support operational deployability requirements.

## SECTION 2: RESPONSIBILITIES

### 2.1. UNDER SECRETARY OF DEFENSE FOR ACQUISITION, TECHNOLOGY, AND LOGISTICS (USD(AT&L)). The USD(AT&L):

- a. Establishes policies governing DoD engineering for transportability and deployability programs.
- b. Requires that effective transportability and deployability engineering techniques and procedures for new and modified systems and equipment (S/E) are incorporated into the DoD materiel acquisition process, as defined by DoDD 5000.01 and DoD Instruction (DoDI) 5000.02.
- c. Requires that S/E, including components and spare parts, are designed, engineered, and constructed so that required quantities can be transported and deployed efficiently and economically by existing and planned transportation assets.
- d. Establishes policies for DoD transportability and deployability engineering procedures to incorporate the increasing role of modeling and simulation (M&S) in system development and testing in accordance with the policies and procedures in DoDIs 5000.61. and 5000.70.

### 2.2. DIRECTOR, DEFENSE LOGISTICS AGENCY (DLA). Under the authority, direction, and control of the USD(AT&L), through the Assistant Secretary of Defense for Logistics and Materiel Readiness, and in addition to the responsibilities in Paragraph 2.4., the Director, DLA:

- a. Ensures compliance with Military Surface Deployment and Distribution Command Transportation Engineering Agency (SDDCTEA) transportability guidance.
- b. Ensures transportation representatives participate in transportability agent meetings. Serves as the conduit between SDDCTEA and DLA primary level field activities on all matters relative to transportability and deployability in DLA contracts.

### 2.3. DIRECTOR, DEFENSE CONTRACT MANAGEMENT AGENCY (DCMA). The Director, DCMA:

- a. Provides guidance to DCMA contract management offices (CMOs) regarding transportability and deployability.
- b. Requires DCMA CMOs to coordinate all transportability and deployability matters in contracts for supplies or services with the DoD Component transportability agents.
- c. Establishes liaisons between DCMA CMOs, DoD Components, and the DLA Supply and Support Centers in performing transportability and deployability functions.

**2.4. DOD COMPONENT HEADS.** The DoD Component heads:

- a. Establish engineering for transportability and deployability programs consistent with this issuance to ensure that transportability and deployability requirements are considered in the design and development of new or modified defense materiel and equipment.
- b. Designate component transportability agents and, where applicable, the mode transportability agents for land, sea, and airlift.
- c. Require Component transportability agents, mode transportability agents, materiel developers, combat developers, user representatives, testers, and evaluators to follow the procedures in Section 3 of this issuance when developing transportability and deployability requirements.

**2.5. SECRETARY OF THE ARMY.** In addition to the responsibilities in Paragraph 2.4., the Secretary of the Army:

- a. Ensures that the Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASA(ALT)) provides policy guidance and oversight for the Army Engineering for Transportability and Deployability Program.
- b. Authorizes oversight to ASA(ALT) for the Army's Engineering for Transportability and Deployability Program.
- c. Through the Commander, Military Surface Deployment and Distribution Command (SDDC):
  - (1) Serves as the Army Transportability Agent and the DoD Transportability Agent for all S/E and transportability and deployability matters requiring multi-DoD Component coordination.
  - (2) Coordinates DoD transportability and deployability interest in common-user land transportation programs with other DoD Components and federal, State, and appropriate overseas agencies. Integrates the needs of the DoD Components into these programs.
  - (3) Serves as the single DoD manager for military traffic and the land transportation portion of the DoD Engineering for Transportability and Deployability Program.
- d. Through the Director, SDDCTEA:
  - (1) Supports the Office of the USD(AT&L) in the development and reissuance of DoDD 4510.11 to implement the DoD Engineering for Transportability and Deployability Program within the DoD.
  - (2) Serves as the Land Mode Transportability Agent for the DoD.

- (3) Serves as the DoD Secretariat for the DoD Engineering for Transportability and Deployability Program for administrative continuity and record keeping.
- (4) Serves as the single point of contact for the Department of the Army for:
  - (a) Conduct of transportability engineering and deployability analyses.
  - (b) Provision of transportability and deployability guidance and assistance.
- (5) Provides all transportability approvals to Army developing and procuring agencies and provides land transportability approvals to other DoD Components when it is determined that the S/E meets all of its land transportability requirements.
- (6) Reviews capabilities documents, specifications, and other requirements documents to assure that transportability and deployability are sufficiently addressed for systems to meet their mission requirements.
- (7) Prepares and publishes guidance containing transportation procedures for land transportation, common-user ocean terminals, and for transport of newly acquired or modified Army equipment.
- (8) Represents DoD on the Association of American Railroads' (AAR) Open Top Car Loading Rules Committee, and obtains approval of loading drawings for inclusion in the AAR Open Top Loading Rules Manual.
- (9) Manages data collection, validation, input, and dissemination for the Joint Equipment Characteristics Database in accordance with DoD standard data elements within the Transportation Logical Data Model.
- (10) Provides M&S capabilities and transportability and deployability engineering expertise to support the initiatives using computer-aided design and computer-aided engineering methodologies in support of the DoD Engineering for Transportability and Deployability Program.
  - e. Through the Director, U.S. Army Natick Soldier Research, Development, and Engineering Center (NSRDEC):
    - (1) Provides rotary and tilt-wing aircraft sling load design guidance for materiel developers.
    - (2) Develops, reviews, and certifies procedures for external transport of equipment by rotary and tilt-wing aircraft for all DoD Components, and internal transport of equipment by the U.S. Army and U.S. Air Force rotary and tilt-wing aircraft.
    - (3) Provides airdrop design guidance to materiel developers.
    - (4) Develops or reviews airdrop-rigging procedures and certifies S/E for airdrop for the appropriate DoD Component and mode transportability agent or the designating agency.

**2.6. SECRETARY OF THE NAVY.** In addition to the responsibilities in Paragraph 2.4., the Secretary of the Navy:

a. Through the Commander, Naval Supply Systems Command (NAVSUP):

(1) Coordinates with the appropriate DoD Component mode transportability agents to resolve transportability issues that affect U.S. Navy materiel systems.

(2) Serves as the Navy's Component Transportability Agent.

b. Through the Commander, Military Sealift Command (MSC):

(1) Provides sealift transportability analysis to the requesting component for military systems requiring transport on U.S. Navy and merchant cargo vessels.

(2) Serves as the Ocean Mode Transportability Agent.

(3) Coordinates DoD transportability interest in common-user ship construction and modification programs with appropriate federal and DoD Components, and integrates the needs of the DoD Components into these programs.

(4) Coordinates the ocean transportation portion of the Department of the Navy's Engineering for Transportability and Deployability Program.

c. Through the Commander, Naval Air System Command:

(1) Provides load design and guidance for materiel developers for S/E transported within Department of the Navy aircraft.

(2) Develops, reviews, and certifies procedures for transport of equipment inside Department of the Navy aircraft.

d. Through the Commandant of the Marine Corps and the Commander, Marine Corps Systems Command:

(1) Serves as the U.S. Marine Corps Component Transportability Agent.

(2) Provides engineering analysis for the U.S. Marine Corps Transportability, Naval Integration, and Deployability Program.

(3) Obtains mode-specific transportability certifications from DoD Component transportability agents, and reviews the transportability section of capabilities documents, specifications, and other appropriate materiel requirements documents for compatibility with transportation requirements.

(4) Provides S/E Naval Integration/Transportability certification for U.S. Marine Corps Prepositioning Program and amphibious ships and craft.



(5) Furnishes SDDCTEA with the transportability characteristic data for all U.S. Marine Corps equipment, and notifies SDDCTEA of changes in equipment dimensions or weight.

**2.7. SECRETARY OF THE AIR FORCE.** In addition to the responsibilities in Paragraph 2.4., the Secretary of the Air Force:

a. Coordinates DoD transportability interests in common-user aircraft construction and modification programs with appropriate federal and DoD Components, and integrates the needs of the DoD Components into these programs.

b. Serves as the U.S. Air Force component Transportability Agent.

c. Designates an organization to serve as the U.S. Air Force component and Airlift Mode Transportability Agent and to provide airlift transportability and airdrop technical support and design assistance.

d. Publishes transportability criteria for system program managers' use in the development or modification of U.S. Air Force S/E.

**2.8. CHAIRMAN OF THE JOINT CHIEFS OF STAFF.** In addition to the responsibilities in Paragraph 2.4., the Chairman of the Joint Chiefs of Staff coordinates with appropriate Combatant Commanders to resolve transportability and deployability issues that affect the Combatant Commander's ability to move personnel and materiel in support of a war or contingency plan.

**2.9. COMMANDER, UNITED STATES TRANSPORTATION COMMAND (USTRANSCOM).** In addition to the responsibilities in Paragraph 2.4., the Commander, USTRANSCOM, recommends to the Chairman of the Joint Chiefs of Staff DoD transportation and deployment interests for consideration in defense common-user transport construction and modification programs.

## SECTION 3: PROCEDURES FOR TRANSPORTABILITY AND DEPLOYABILITY OF EQUIPMENT

**3.1. GENERAL.** Developing efficiently functioning and economically transportable equipment and combat resources is an integral part of the DoD acquisition process. All DoD Components will consider transportability and deployability in the:

- a. Acquisition of all types of developmental systems, reprocurments of fielded systems, modified materiel, commercial off-the-shelf items, or non-developmental items.
- b. Acquisition of all systems defined as transportability problem items in the Glossary.
- c. Procurement or modification of defense transportation systems.
- d. Modification of force structure designs.

**3.2. REQUIREMENTS DEFINITION.** DoD Component combat developers and user representatives, in coordination with DoD Component materiel developers and the component and mode transportability agents, should include clear and definitive transportability and, when appropriate, deployability requirements in materiel requirements documents. Requirements should address strategic transport, such as highway, rail, ocean shipping, and U.S. Air Force and Civil Reserve Air Fleet (CRAF) aircraft, and tactical transport such as internal airlift, airdrop, internal and external lift by rotary and tilt-wing aircraft, landing craft, and amphibious shipping.

**3.3. DEPLOYABILITY ASSESSMENTS.** DoD Component and mode transportability agents should conduct a force deployability assessment for proposed acquisition category (ACAT) I and II systems no later in the acquisition cycle than Milestone A in support of the development and approval of the draft Capabilities Development Document. This assessment should analyze the effect of the new system on the available transportation assets and the time required to deploy the gaining units. If the mode transportability agent deems necessary, force deployability assessments may be conducted for ACAT III systems. The mode transportability agent and the user representative should determine the scope of the deployability analysis on a system-by-system basis.

### 3.4. TRANSPORTABILITY COORDINATIONS

a. Military Departments, Defense Agencies, materiel developers, combat developers, and user DoD Component representatives must coordinate transportability and deployability issues with the appropriate mode transportability agents and receive approval and certification. Issues must address:

- (1) Transportability problem items, as defined in the Glossary, for strategic transport, such as air, highway, rail, and ocean shipping.

(2) U.S. Air Force and CRAF aircraft and tactical transport, such as internal airlift, airdrop, internal and external lift by rotary and tilt-wing aircraft, landing craft, and amphibious shipping.

b. DoD Component materiel developers must request approval for S/E that qualify as transportability problem items from the appropriate mode transportability agent(s) at least 90 calendar days before Milestone C or before full rate production of any Engineering Change Programs or Proposals or System Enhancement Programs or Packages.

c. DoD Component mode transportability agents must analyze and approve all S/E that qualifies as transportability problem items before Milestone C, if that S/E meets all of its transportability requirements.

d. DoD Component user representatives, materiel developers, testers, evaluators, and logisticians must maintain a liaison with the mode transportability agents and each other to ensure consideration and accomplishment of transportability and deployability requirements.

e. DoD Component user representatives, materiel developers, testers, evaluators, and logisticians must forward to the appropriate Component or mode transportability agent(s) correspondence concerning transportability matters, regulations, transportability reports, requests for transportability approvals, and technical and operational matters pertaining to the day-to-day operations of the DoD Engineering for Transportability and Deployability Program.

f. DoD Component materiel developers must submit loading drawings to the AAR for inclusion in the “AAR Open Top Loading Rules Manual” to:

Director, SDDCTEA  
Attention: SDTE-DPE  
1 Soldier Way, Building 1900W  
Scott AFB, IL 62225-5006

g. When transported by U.S. Air Force airlift, S/E that meets any of the transportability problem item conditions must be coordinated with the Air Force designated office for airlift and airdrop technical support and design assistance, as listed in Section 4 of this issuance.

h. DoD Component and mode transportability agents and DoD Component user representatives and materiel developers must obtain-certification for transportability problem items to be airlifted inside U.S. Air Force cargo aircraft, or any cargo to be airdropped from U.S. Air Force aircraft using non-standard components or procedures. The Air Force airlift and airdrop technical support office for obtaining transportability engineering and design assistance and safety of flight air certification approval is:

U.S. Air Force Life Cycle Management Center (AFLCMC)  
Crew Systems Branch (EZFC)  
Air Transportability Test Loading Activity (ATTLA)  
2145 Monahan Way, Building 28, Area B  
Wright Patterson AFB, OH 45433-7017

i. The DoD Component and mode transportability agents and component user representatives and materiel developers should get engineering and design help and certification from the Director, U.S. Army, Natick Soldier Research, Development & Engineering Center (NSRDEC), Kansas Street, Natick, MA 01760, for materiel to be:

(1) Airdropped from fixed-wing aircraft (Attention: Warfighter Protection and Aerial Delivery Directorate (RDNS-WPA-D)).

(2) Externally transported by rotary or tilt-wing aircraft (Attention: RDNS-WPA-D).

(3) Internally transported by U.S. Army rotary and tilt-wing aircraft (Attention: RDNS-WPA-D).

(4) Mounted in rigid wall shelters (Attention: RDNS-STC). The Joint Committee on Tactical Shelters (JOCOTAS) must approve rigid wall shelters, either as standard shelters or by a waiver for use in specific systems. DoD standard rigid-wall shelters are shown in the JOCOTAS Brochure. The JOCOTAS must approve the use of non-standard shelters.

j. DoD mode transportability agents should review transportability problem items that are moved by the Defense Transportation System (DTS) to support other federal non-DoD agencies.

**3.5. PROCEDURES.** DoD Component transportability agents, mode transportability agents, materiel developers, combat developers, user representatives, testers, and evaluators will follow these procedures:

**a. DoD Transportability Agents**

(1) Coordinate with SDDCTEA on all transportability or deployability matters relating to more than one DoD Component.

(2) Convene meetings of working groups within their DoD Components to exchange information, resolve problems, and recommend transportability and deployability objectives. SDDCTEA will conduct meetings of the transportability agents, as needed, to discuss issues or problems facing the DoD Engineering for Transportability and Deployability Program.

(3) Maintain liaisons with other DoD Components, with major commands of their respective Components, other government agencies, and commercial industry in matters pertaining to transportability and deployability for their respective Components.

(4) Coordinate with the other DoD Component transportability agents when their Components require changes in the design of the DTS.

(5) Coordinate with the other DoD Component transportability agents and the Joint Staff before formalizing and implementing modifications to portions of the DTS that may affect its transportability characteristics.

**b. Mode Transportability Agents**

(1) Prepare, coordinate, and maintain joint transportability and deployability criteria covering modes, terminals, and equipment for which their components have transportability and deployability engineering responsibility.

(2) Monitor changes to the elements of commercial transportation systems for which they have transportability responsibility.

(3) Coordinate changes that may affect transportability or deployability with other DoD Components.

(4) Analyze the transportability and deployability of S/E transportability problem items, as defined in the Glossary.

(5) Approve S/E transportability problem items that meet the transportability and deployability requirements of their capabilities documents.

### **c. Materiel Developers**

(1) Design, develop, procure, and field systems that meet the requirements of the DoD Engineering for Transportability and Deployability Program, as indicated in MIL-STD-1366E for basic interface criteria for all modes and MIL-STD-1791 for general design and performance requirements for the airlift mode.

(2) Inform their DoD Component and mode transportability agent(s) of any system identified as a transportability problem item, as outlined in the Glossary, and follow their Component's procedures for obtaining transportability approval and certification.

(3) Reconcile any system incompatibilities and non-concurrences identified through coordination with the appropriate mode transportability agents before the next acquisition milestone review.

(4) Ensure adequate testing is conducted to verify that the S/E meets the transportability requirements of the capabilities documents and verify proper fit of the S/E on required transporters.

(5) Incorporate modeling, simulation, and related tools where it can save testing time and funding instead of physical transportability testing, in coordination with the appropriate mode transportability agent(s).

(6) Make test and evaluation reports available for use in certifying that the S/E meets the transportability requirements and developing transportability guidance and procedures.

### **d. Combat Developers and User Representatives**

(1) Annotate the minimum acceptable transportability and deployability requirements for all S/E for both strategic and tactical deployment and transport in capabilities documents. Consider transportation assets available, tools, personnel, materials handling equipment available for disassembly and re-assembly, time required for preparation for transport and to become

operational after transport, and time required for force deployment in establishing S/E requirements.

(2) Annotate these requirements as key performance parameters when failure to meet them will prevent the S/E from accomplishing its intended mission.

(3) Request the appropriate mode transportability agent(s) to conduct deployability analyses no later than the Engineering and Manufacturing Development phase of the acquisition cycle to establish a baseline for the effect that each alternative for meeting the S/E's requirements has on force deployment.

(4) Staff new or revised S/E transportability and deployability requirements with the appropriate DoD Component mode transportability agent(s).

#### **e. Testers**

(1) Support the materiel developer, when required, with transportability testing capabilities (both technical and, when appropriate, operational testing) to include modeling, simulation, and other related tools.

(2) Ensure that the S/E can be loaded (such as proper fit) and unloaded by appropriate technical and operational personnel on required transporters.

(3) Develop test reports and evaluation reports for use in certifying S/E for transport, when required, and for use in developing transportability guidance and procedures.

#### **f. Evaluators**

(1) In coordination with the mode transportability agent(s), ensure transportability testing is conducted to adequately evaluate the transportability requirements of the S/E.

(2) Evaluate the end-item, in its tactical and packaged or shipping configurations, as well as associated support equipment and test, measurement, and diagnostic equipment, to ensure it is deployable.

(3) Evaluate the ability of the transportation asset to carry the load.

(4) Evaluate the ability of the transportation network and current bridging, including tactical bridging, to support the weight and dimensions of the new system in the required operational environment.

## SECTION 4: DoD COMPONENT TRANSPORTABILITY AGENTS AND MODE TRANSPORTABILITY POINTS OF CONTACT

**4.1. GENERAL.** Table 1 identifies the offices with primary transportability and deployability engineering responsibility within each of the DoD Components. Table 2 identifies the mode transportability agents and their associated DoD Component.

**Table 1. DoD Component Offices with Engineering for Transportability and Deployability Program Implementing Responsibility**

<b>DoD Component</b>	<b>Primary Agency Within DoD Component</b>	<b>Supporting Office or Agency</b>	<b>Component Transportability Agent</b>
U.S. Army	ASA(ALT)	ASA(ALT)	SDDC
U.S. Navy	Deputy Chief of Naval Operations Fleet Readiness and Logistics (OPNAV N4)	NAVSUP (4D)	NAVSUP Weapons Systems Support (WSS) Code 092
U.S. Marine Corps	Marine Corps Systems Command	SIAT	Systems Engineering and Integration
U.S. Air Force	Deputy Chief of Staff, Logistics, Installations and Mission Support (AF/A4)	Air Force Materiel Command (AFMC)/Logistics Readiness Division	AFMC/Logistics Readiness Division
DLA	DLA Headquarters (HQ) J3	DLA HQ J34	DLA HQ J345 (Transportation Policy)
SIAT: Systems Engineering, Interoperability, Architectures and Technology			

**Table 2. DoD Component Mode Transportability Points of Contact**

<b>DoD Component</b>	<b>Mode</b>	<b>Transportability Agent</b>
U.S. Army	Land	SDDCTEA
U.S. Navy	Ocean	MSC
U.S. Air Force	Airlift	AFMC

#### **4.2. ADDRESSES FOR DOD COMPONENT OFFICES WITH ENGINEERING FOR TRANSPORTABILITY AND DEPLOYABILITY PROGRAM IMPLEMENTING RESPONSIBILITY**

- a. Department of Defense and Department of the Army:

Commander  
Military Surface Deployment and Distribution Command  
1 Soldier Way, Building 1900W  
Scott AFB, IL 62225-5006

- b. Department of the Navy:

Commanding Officer  
Naval Supply Systems Command Weapons Systems Support  
(NAVSUP WSS Code 092)  
1837 Morris Street, Code N48.2, Suite 600  
Norfolk, VA 23511-3492

- c. U.S. Marine Corps:

Marine Corps Systems Command  
Attention: Joint Integration & Transportability Branch (Transportability Officer)  
Systems Engineering, Interoperability, Architectures and Technology  
2200 Lester Street  
Quantico, VA 22134-6050

- d. Department of the Air Force:

HQ AFMC/A4R  
Logistics Readiness Division  
4375 Chidlaw Road  
Wright-Patterson AFB, OH 45433-5006

- e. Defense Logistics Agency:

Director, DLA Logistics Operations (J3)  
8725 John J. Kingman Road  
Fort Belvoir, VA 22060-6221

#### **4.3. DOD MODE TRANSPORTABILITY POINTS OF CONTACT**

- a. Land:

Director, SDDCTEA  
1 Soldier Way, Building 1900W, Attention: SDTE-DPE,  
Scott AFB, IL 62225-5006



b. Ocean:

Commander, Military Sealift Command  
914 Charles Morris Court, SE, Attention: N7  
Washington Navy Yard  
Washington, DC 20398-5540

c. Airlift:

Department of the Air Force  
HQ AFMC/A4R  
4375 Chidlaw Road  
Wright-Patterson AFB, OH 45433-5006

**4.4. AIR FORCE DESIGNATED AIRLIFT AND AIRDROP TECHNICAL SUPPORT  
AND DESIGN ASSISTANCE OFFICE**

U.S. Air Force Life Cycle Management Center (AFLCMC)  
Crew Systems Branch (EZFC)  
Air Transportability Test Loading Activity (ATTLA)  
2145 Monahan Way, Building 28, Area B  
Wright Patterson AFB, OH 45433-7017

## GLOSSARY

### G.1. ACRONYMS.

AAR	Association of American Railroads
ACAT	acquisition category
AFLCMC	Air Force Life Cycle Management Center
AFMCASA(ALT)	Air Force Materiel Command Assistant Secretary of the Army (Acquisition, Logistics and Technology)
ATTLA	Air Transportability Test Loading Activity
CMO	contract management office
CRAF	Civil Reserve Air Fleet
DCMA	Defense Contract Management Agency
DLA	Defense Logistics Agency
DODD	DoD Directive
DODI	DoD Instruction
DTS	Defense Transportation System
HQ	headquarters
in	inch
JOCOTAS	Joint Committee on Tactical Shelters
kg	kilogram
kPA	kiloPascal
m	meter
M&S	modeling and simulation
mm	millimeter
MSC	Military Sealift Command
NAVSUP	Naval Supply Systems Command
NSRDEC	Natick Soldier Research, Development, and Engineering Center
SDDC	Military Surface Deployment and Distribution Command
SDDCTEA	Military Surface Deployment and Distribution Command Transportation Engineering Agency
S/E	systems and equipment
USD(AT&L)	Under Secretary of Defense for Acquisition, Technology, and Logistics
USTRANSCOM	United States Transportation Command
WSS	Weapons Systems Support

**G.2. DEFINITIONS.** Unless otherwise noted, these terms and their definitions are for the purpose of this issuance.

**capabilities document.** Details the minimum acceptable operational requirements for the S/E.

**combat developer.** An organization within a DoD Component responsible for formulating operational doctrine and concepts, force and unit organization, and S/E requirements.

**common-user item.** An item of an interchangeable nature that is in common use by two or more nations or Services of a nation.

**common-user land transportation.** Point-to-point land transportation service operated by a single Service for common use by two or more Services.

**deployability.** The ability to move forces and materiel anywhere in the world in support of a military operation.

**DTS.** That portion of the worldwide transportation infrastructure that supports DoD transportation needs in peacetime and wartime. The DTS consists of two major elements: military (organic) and commercial resources. These resources include aircraft, assets, services, and systems organic to, contracted for, or controlled by the DoD. The DTS infrastructure, including ports, airlift, sealift, railway, in-transit visibility, information management systems, customs, and traffic management that the DoD maintains and exercises in peacetime, is a vital element of the DoD capability to project power worldwide. It provides for responsive force projection and a seamless transition between peacetime and wartime operations.

**DoD Component transportability agent.** The individual(s) within each DoD Component that has primary responsibility for transportability and deployability matters.

**evaluator.** The individual within each DoD Component who assesses whether the S/E meets the user representative's requirements based on the tester's test reports.

**force deployability assessment.** An assessment by the DoD Component transportability agent that determines the impact of an S/E's proposed design characteristics on the receiving unit or force's ability to meet current and future deployment criteria using existing and future deployment assets.

**in-transit visibility.** The ability to track the identity, status, and location of DoD units, and non-unit cargo (excluding bulk petroleum, oils, and lubricants) and passengers; patients; and personal property from origin to consignee or destination across the range of military operations.

**Joint Equipment Characteristics Database.** A database of equipment characteristics to include weights, dimensions, airlift certifications, and item imagery (photograph, line drawing, or computer-assisted design images) maintained by SDDCTEA.

**materiel developer.** An organization within a DoD Component responsible for research and development and production validation of an item.

**Milestone C.** A milestone decision authority-led review at the end of the engineering, manufacturing, and development phase.

**mode transportability office.** The office within each DoD Component that has primary responsibility for transportability and deployability matters associated with one mode of transport (land, ocean, or airlift).

**primary level field activity.** DLA field activities reporting to DLA Headquarters, including DLA Aviation, DLA Disposition Services, DLA Distribution, DLA Energy, DLA Land and Maritime, and DLA Troop Support.

**rebuy.** Another purchase of the identical items in the identical amount under the identical terms from the identical supplier and normally from the same purchasing activity.

**S/E.** All items and item components necessary for the equipment, maintenance, operation, and support of military activities, without distinction of their application for administrative or combat purposes, excluding ships.

**tester.** An organization within a DoD Component that is responsible for testing S/E under simulated or actual operational conditions.

**transportability.** The inherent capability of an item or system to be moved effectively and efficiently by required transportation assets and modes.

**transportability problem item.** S/E that meets any of the following conditions are defined as transportability problem items when transported by highway, rail, or waterborne vessels and should be coordinated with the appropriate DoD Component mode transportability office:

Item is wheeled or tracked, and is to be towed, hauled or self-propelled on or off highway.

Item increases the physical characteristics of the designated transport assets.

Item requires special handling or special loading procedures.

Item has inadequate ramp clearance for ramp inclines of 15 degrees.

Item exceeds any of these conditions:

Length - 20 feet (6096 millimeters (mm), 240 inches (in)).

Width - 8 feet (2438 mm, 96 in).

Height - 8 feet (2438 mm, 96 in).

Weight - 10,000 pounds (4,535 kilograms (kg)).

Weight per linear foot - 1,600 pounds/foot (726 kg/meter (m)).

Floor contact pressure - 50 psi (344.7 kiloPascal (kPA)).

**transportability problem item for airlift.** S/E that meet any of the following conditions are defined as transportability problem items for transport by U.S. Air Force airlift, and should be coordinated with the appropriate mode transportability agent:

Item that exceeds any of these conditions:

Length - 20 feet (6096 mm, 240 in).

Width - 8 feet (2438 mm, 96 in).

Height - 8 feet (2438 mm, 96 in).

Weight - 10,000 pounds (4,535 kg).

Weight per linear foot - 1,600 pounds/foot (726 kg/m).

Floor contact pressure - 50 psi (344.7 kPa).

Items that require special equipment or procedures that are not listed in the aircraft's loading manual.

Items designed to be loaded into aircraft rail systems that are not contained in the applicable aircraft loading manual.

All types of watercraft.

All fixed-wing, rotary-wing, or tilt-rotor aircraft.

Special use wheeled vehicles not designed for highway travel, weighing 20,000 pounds (9,072 kg) or more.

Enclosed items (airtight containers, on-board tanks, and similar items) that are not designed with pressure relief devices or items that cannot be configured in a way to allow for aircraft cabin pressure changes.

Items with questionable structural integrity or items with significant damage to the frame, structural components, or tiedown provisions.

Items that cannot be restrained using standard restraint procedures listed in the aircraft's loading manual or items requiring specific restraint application procedures. Items must be able to be restrained for 3G force forward, 1.5G force aft, 1.5G force lateral, and 2G force vertical and be capable of withstanding a 4.5G force down load. All stored or installed equipment must meet the same requirements.

Equipment that is designed to be occupied during any phase of flight.

Items that will be connected to the aircraft in any way other than tiedown straps or chains (e.g. connection to aircraft overboard vents, electrical outlets, antennas, etc.).

Any item that will be operated during flight (e.g. laptop computers, portable command centers, radios, transmitters, refrigerators, etc.).

**user representative.** The DoD Component office point of contact that generates requirements for S/E.

## REFERENCES

- Association of American Railroads (AAR), “AAR Open Top Loading Rules Manual,” August 1, 2012<sup>1</sup>
- DoD Directive 4510.11, “DoD Transportation Engineering,” December 23, 2014
- DoD Directive 5000.01, “The Defense Acquisition System,” May 12, 2003
- DoD Directive 5134.01, “Under Secretary of Defense for Acquisition, Technology, and Logistics,” December 9, 2005, as amended
- DoD Instruction 5000.02, “Operation of the Defense Acquisition System,” January 7, 2015
- DoD Instruction 5000.61, “DoD Modeling and Simulation (M&S) Verification, Validation, and Accreditation (VV&A),” December 9, 2009
- DoD Instruction 5000.70, “Management of DoD Modeling and Simulation (M&S) Activities,” May 10, 2012, as amended
- Joint Committee on Tactical Shelters (JOCOTAS) Brochure, “DoD Standard Family of Tactical Shelters (Rigid/Soft/Hybrid),” May 2012<sup>2</sup>
- Military Standard 1366E, “Interface Standard for Transportability Criteria,” October 31, 2006
- Military Standard 1791, “Designing for Internal Aerial Delivery in Fixed Wing Aircraft,” December 2, 2014

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<sup>1</sup> Copies available at: <https://www.aar.com/standards/pdfs/OTLRM-Index.pdf>

<sup>2</sup> Copies available to authorized individuals by contacting: <http://jocotas.natick.army.mil/index.htm>