All DoD Components shall ensure that transportability and deployability are a major consideration in the acquisition of all types of developmental systems, rebuys of fielded systems, modified materiel, or non-developmental items, and for all systems defined as a transportability problem item.

*Department of Defense Instruction (DoDI) 4540.07, Operation of the DoD Engineering for Transportability and Deployability Program, section 6.2, 11 September 2007*

“Efficient and economically transportable equipment and combat resources are critical to enhancing the Army’s warfighting capability. All new systems, major modifications, upgrades to current systems, nondevelopmental items, commercial items, and re-procurements designated as transportability problem items (TPI) must obtain approval from the Commander, SDDC, in accordance with DoDI 4540.07 and AR 70-47.”

*Army Regulation (AR) 70-1, Army Acquisition Policy, section 4-5, 22 July 2011*

Many people do not understand transportability and the role it plays in the DoD acquisition process. This paper attempts to provide a basic understanding of the transportability approval process and the role of the Military Surface Deployment and Distribution Command Transportation Engineering Agency (SDDCTEA). Before we get into the process, here are some basic definitions of terms taken from AR 70-47, Engineering for Transportability Program, 11 September 2012.

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

**Transportability Approval** – *A statement from SDDCTEA, the Army transportability agent, that an item of materiel, in its shipping configurations, is transportable by the required mode(s) of transportation and meets its transportability requirements.*

The transportability approval is required prior to Milestone C according to several regulations. Details on the regulations will be provided later in this document.

**Transportability Engineering** – *The process of identifying and measuring limiting constraints, characteristics, and environments of transportation systems; the integration of these data into design criteria to use operational and planned transportation capability effectively; and the development of technical transportability guidance.*

*DoDI 4540.07, paragraph 5.5.3 states that the Commander, Military Surface Deployment and Distribution Command (SDDC) serves as the Army Transportability Agent and the DoD Transportability Agent for all systems and equipment (S/E) matters requiring multi-component coordination.*
Transportability and the Acquisition Process

*DoDI 4540.07*, section 5.5.4 states that the Director, SDDCTEA serves as the Land Mode Transportability Agent for the DoD and the single point of contact for Army agencies in conducting transportability engineering and deployability analyses and for providing transportability and/or deployability guidance and assistance. SDDCTEA also serves as the DoD Secretariat for the Engineering for Transportability and Deployability Program per paragraph 5.2.3.1 of the DoDI.

<table>
<thead>
<tr>
<th>What Types of Materiel Requires Transportability Approval?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per paragraph 1-5.a(1) of AR 70-47, the AR applies to, “…all Army materiel (major end items, components, and spare parts) to include: research, development, test, and evaluation (RDT&amp;E) systems; product improvements (including materiel modifications and upgrades); commercial items and military-adapted commercial items; foreign source items; nondevelopmental items; rapidly fielded equipment; reprocurements; and systems/equipment/munitions (SEM).”</td>
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<table>
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<tr>
<th>Is the Materiel a Non-Problem Item?</th>
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<tr>
<td>If the materiel is considered a non-problem item (NPI) (SDDCTEA will make that determination per the definition of a transportability problem item (TPI) from <em>DoDI 4540.07</em> and <em>AR 70-47</em>), then per paragraph 1-5.c of <em>AR 70-47</em>, an NPI statement and email will be provided from SDDCTEA.</td>
</tr>
</tbody>
</table>

For transportability problem items (TPIs), a simple step-by-step process of transportability in the Army acquisition process and the organizations involved begins with the end user or Capability Developer (CAPDEV) providing a requirement for a capability that they desire. A flowchart of the process can be found in Figure 1. The requirement is recorded into a formal capability document such as a capability development document (CDD) or capabilities production document (CPD). SDDCTEA is required to review the capability document to ensure that transportability requirements are adequately covered.

<table>
<thead>
<tr>
<th>SDDCTEA Reviews Capability Documents</th>
</tr>
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<tbody>
<tr>
<td>SDDCTEA reviews capability documents to ensure transportability considerations are adequately stated per <em>AR 70-47</em>, paragraph 1-13.e, paragraph 1-14.a, and section 2.3.</td>
</tr>
</tbody>
</table>

Once the capability document has been finalized and approved, the Materiel Developer (MATDEV) or Program Manager (PM), takes the program and seeks a materiel solution for the stated need. Part of that search for the materiel solution can be to convene a source selection evaluation board (SSEB) to select a piece of equipment to continue through the acquisition process.
**Transportability and the Acquisition Process**

**CAPDEV**
- USER
  - NEED
    - REQUIREMENT
      - CAPABILITY DOCUMENT
        - MATERIEL ACQUISITION
          - TESTING
            - SDDCTEA reviews the capability document per AR 70-47, 1-13.e.
            - SDDCTEA reviews the TEMP per AR 70-47, 1-13j & 1-18.k.
            - SDDCTEA must witness testing per AR 70-47, 2-7.c.
          - Does the Materiel meet the CAPDEV's requirements?
            - NO
              - MATERIEL TRANSPORTABILITY
                - MATDEV
                  - PM
                    - TRANSPORTABILITY REPORT
                      - SDDCTEA
                        - MILESTONE C
                          - FIELDING
                            - SDDCTEA has 45 days to issue approval per 2-9.d.

**Per DoDI 4540.07, 6.6 & AR 70-1, 4-5.d.**

Figure 1. Transportability in Acquisition Flowchart
Transportability and the Acquisition Process

SDDCTEA is Required to Participate in the SSEB
Per AR 70-47, paragraph 1-13.h, SDDCTEA is required to supply an Army transportability agent representative to support the MATDEV with SSEBs. In paragraph 1-18-j, the MATDEV is required to request support from SDDCTEA for SSEBs.

The MATDEV (or contractor) would then need to submit to SDDCTEA a transportability report for the selected materiel per AR 70-47, section 2-4. The report is a detailed listing of all the physical characteristics for the piece of equipment and provides all the information necessary to perform a comprehensive transportability engineering analysis. A format for the transportability report can be found in Appendix B of AR 70-47 or Data Item Description (DI-PACK) 80880D.

MATDEV Submits Transportability Report to SDDCTEA
Per AR 70-47 section 2-4, a transportability report on the materiel that follows the format in Appendix B of AR 70-47, must be submitted to SDDCTEA.

The materiel selected by the MATDEV then needs to be tested to verify it meets the capabilities/requirements desired by the CAPDEV. This testing typically takes place in the “Engineering and Manufacturing Development” phase of the acquisition process. All required testing is stated in the test and evaluation master plan (TEMP). Required transportability testing typically would include Military Standard (MIL-STD) 209, Lifting and Tiedown Provision tests and a MIL-STD-810 rail impact test. Required testing all depends on the particular transportability requirements of the materiel.

SDDCTEA is Required to Review the TEMP
Per AR 70-47, paragraphs 1-13.j and 1-18.k, SDDCTEA is required to review the transportability sections of the TEMP to ensure that transportability testing (such as MIL-STD-209 and MIL-STD-810 testing) is adequately covered.

As stated earlier, transportability testing usually involves MIL-STD-209 lift and tiedown provision testing as most materiel must be tied down (secured) during transport. The tiedown provisions must successfully pass their pull tests before moving on to other types of transportability testing, such as the MIL-STD-810 rail impact test. Other specialized transportability testing would also take place based on the specific transportability requirements of the materiel. This other testing could include (but not limited to) test loadings, airdrops, or helicopter sling loading. Per AR 70-47, test procedures shall be coordinated with SDDCTEA at least 30 days before the test date. SDDCTEA shall be notified of the exact test time and location at least five days before the test. SDDCTEA or SDDCTEA’s appointed representative must witness all transportability testing.
Transportability and the Acquisition Process

SDDCTEA Must Witness All Transportability Testing
Transportability procedures shall be coordinated with SDDCTEA at least 30 days prior to the test. SDDCTEA must be notified of the exact time and location of transportability tests 5 days before the test. SDDCTEA (or their appointed representative) must witness all transportability testing per AR 70-47, paragraph 2-7.c.

Once all require transportability testing has been successfully completed, the final test reports received by SDDCTEA, and SDDCTEA has received all required transportability certifications (shelter, air transport, helicopter sling load, and/or airdrop) from other transportability agents, SDDCTEA has 45 days to provide a transportability approval to the MATDEV per AR 70-47, paragraph 2-9.d. Transportability approval is also required prior to Milestone C per DoDI 4540.07, paragraphs 6.6 and 6.7; AR 70-1, paragraph 4-5.d; AR 71-9, Warfighting Capabilities Determination, paragraph 2-20.j; AR 700-127, Integrated Logistics Support, paragraph 2-16.h. Transportability approval is also used to support the Materiel Release process per AR 700-142, Type Classification, Materiel Release, Fielding, and Transfer, 17 January 2013, section 2-23.

SDDCTEA Transportability Approval in Support of Milestone C
Per paragraphs 6.6 and 6.7 of DoDI 4540.07, the MATDEV should request transportability approval for TPIs at least 90 days prior to Milestone C (6.6). SDDCTEA will provide transportability approval to TPIs before Milestone C (6.7). Per AR 70-47, paragraph 2-9.d, SDDCTEA has 45 days to provide a transportability approval to the MATDEV in support of Milestone C, once all transportability testing has been successfully completed, all transportability certifications have been received, and the materiel meets its transportability requirements. Please keep this in mind when planning for the Milestone C decision point. Other regulations where transportability approval is mentioned include, AR 70-1 (section 4-5), AR 71-9 (section 2-20), AR 73-1 (section 2-18), AR 700-127 (section 2-16), and AR 700-142 (section 2-23).

Because requirements and capabilities are always being updated or revised, any revision in the materiel might require new transportability testing and/or an update to the transportability approval. In the final paragraph of each transportability approval, SDDCTEA includes a statement about the need to update the transportability approval if modifications take place or changes occur that increase the size and/or weight of the system. DoDI 4540.07 (6.2.1), AR 70-1 (4-5) and 70-47 (1-5.a(1)) also state that any product improvements, developmental systems, non-developmental items, modifications, upgrades to current systems or reprocurements will require an updated transportability report and an upgraded transportability approval.
Transportability and the Acquisition Process

**Transportability Approval Updates**

Any product improvements, modifications, upgrades, or reprocurements may require new transportability testing and will require an updated transportability approval, especially when changes have occurred in the size and/or weight of the materiel.

Once a transportability approval has been issued by SDDCTEA, their role in the Engineering for Transportability Program is not over. SDDCTEA is responsible for managing data collection and maintaining the *Standard Characteristics (Dimensions, Weight, and Cube) for Transportability of Military Vehicles and Other Outsize/Overweight Equipment*, Army TB-55-46, per DoDI 4540.07 (5.5.4.8) and AR 70-47 (1-13.o). The MATDEV is required to support this data collection per AR 70-47 (1-18.l).

SDDCTEA also publishes and distributes transportability guidance/procedures for moving military equipment by the various transport modes. These publications used to be called “pamphlets,” but this name was changed to “modal instructions” in the latest update to AR 70-47 to prevent confusion with other “pamphlets” published by the Department of the Army. These modal instructions are required per DoDI 4540.07 (5.5.4.6) and AR 70-47 (1-13.k). The MATDEV is required to support the development and update of these modal instructions per AR 70-47 (1-18.i). The modal instructions are sent out free of charge and can be ordered or electronically downloaded from the SDDCTEA web site, [http://www.tea.army.mil/pubs/deploy.asp](http://www.tea.army.mil/pubs/deploy.asp). The current list of modal instructions available are as follows:

55-19  *Tiedown Handbook for Rail Movements*
55-20  *Tiedown Handbook for Truck Movements*
55-21  *Lifting and Tiedown of U.S. Military Helicopters*
55-22  *Marine Lifting and Lashing Handbook*
55-23  *Containerization of Military Vehicles*
55-24  *Vehicle Preparation Handbook for Fixed Wing Air Movements*

70-1  *Transportability for Better Deployability*
700-4  *Vessel Characteristics for Shiploading*
700-6  *LMSR User’s Manual*
700-7  *Fast Sealift Ship User’s Manual*

A CD with all these documents and all related transportability regulations can also be ordered from the SDDCTEA web site.
For any transportability engineering questions, feel free to contact the Transportability Engineering Branch at SDDCTEA.

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Transportability References

DoDD 4510.11, DoD Transportation Engineering, 12 April 2004
DoDI 4540.07, Operation of the DoD Engineering for Transportability and Deployability Program, 11 September 2007
AR 70-1, Army Acquisition Policy, 22 July 2011
AR 70-47, Engineering for Transportability Program, 11 September 2012
AR 71-9, Warfighting Capabilities Determination, 28 December 2009
AR 73-1, Test and Evaluation Policy, 1 August 2006
AR 700-127, Integrated Logistics Support, 26 March 2012 (RAR)
AR 700-142, Type Classification, Materiel Release, Fielding, and Transfer, 17 January 2013

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