

Change No. 10

Headquarters
 Department of the Army
 Washington, DC, 29 June 2012

The Army Universal Task List

1. Change 10 to FM 7-15, 27 February 2009, updates the tasks with engineer activities and other collective tasks.
2. Renames ART 1.6, Conduct Assured Mobility.
3. Moved ART 4.4, Conduct Internment/Resettlement Operations, to ART 6.13, Conduct Internment and Resettlement Operations.
4. Replaces ART 4.5, Provide General Engineering Support.
5. Renames ART 6.7, Enhance Protection.
6. Adds ART 6.13, Conduct Internment and Resettlement Operations.
7. An increment symbol (Δ) marks new material.
8. FM 7-15, 27 February 2009, is changed as follows:

Remove Old Pages	Insert New Pages
pages i through viii	pages i through viii
pages 1-1 and 1-2	pages 1-1 and 1-2
pages 1-33 through 1-36	pages 1-33 through 1-36
pages 4-1 and 4-2	pages 4-1 and 4-2
pages 4-73 through 4-97	pages 4-73 through 4-95
pages 6-1 and 6-2	pages 6-1 and 6-2
pages 6-39 and 6-40	pages 6-39 and 6-40
page 6-103	pages 6-103 through 6-107
References-1 through References-5	References-1 through References-5

9. File this transmittal sheet in front of the publication for reference purposes.

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FM 7-15, C10
29 June 2012

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The Army Universal Task List

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*This publication supersedes FM 7-15, 31 August 2003.

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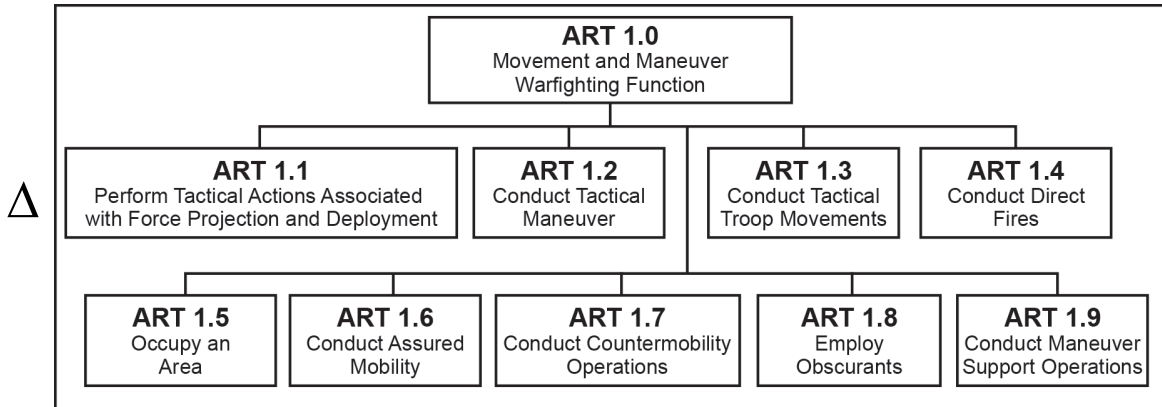
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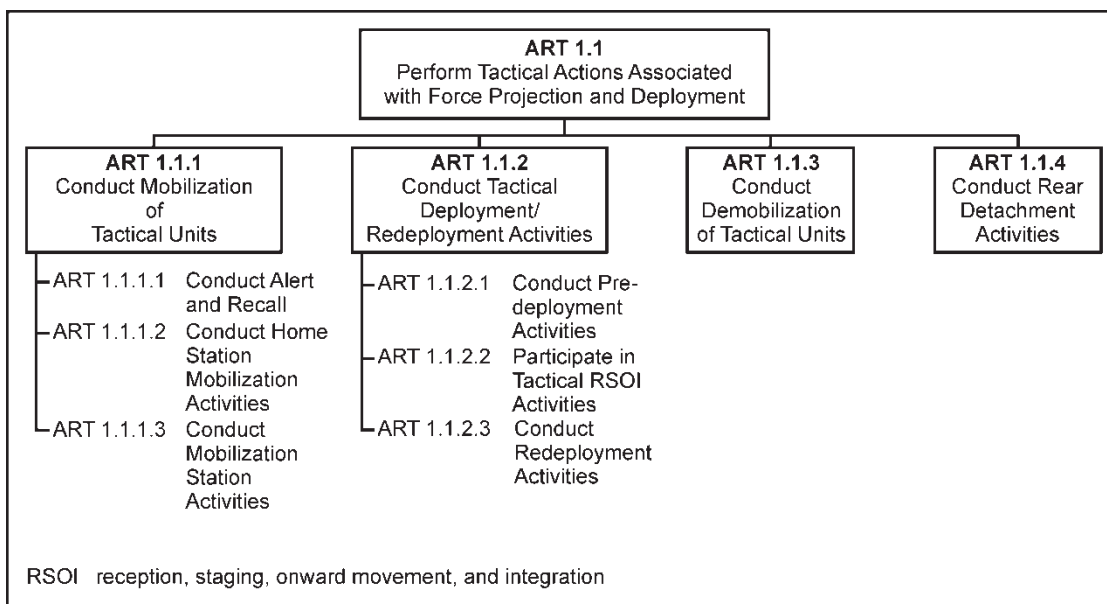
Chapter 1

∞ART 1.0: The Movement and Maneuver Warfighting Function



The *movement and maneuver warfighting function* is the related tasks and systems that move forces to achieve a position of advantage in relation to the enemy. Direct fire is inherent in maneuver, as is close combat. The function includes tasks associated with force projection related to gaining a positional advantage over an enemy. One example is moving forces to execute a large-scale air or airborne assault. Another is deploying forces to intermediate staging bases in preparation for an offensive. *Maneuver* is the employment of forces in the operational area through movement in combination with fires to achieve a position of advantage in respect to the enemy in order to accomplish the mission. Maneuver is the means by which commanders mass the effects of combat power to achieve surprise, shock, and momentum. Effective maneuver requires close coordination with fires. Movement is necessary to disperse and displace the force as a whole or in part when maneuvering. Both tactical and operational maneuver require logistic support. (ADP 3-0) (USACAC)

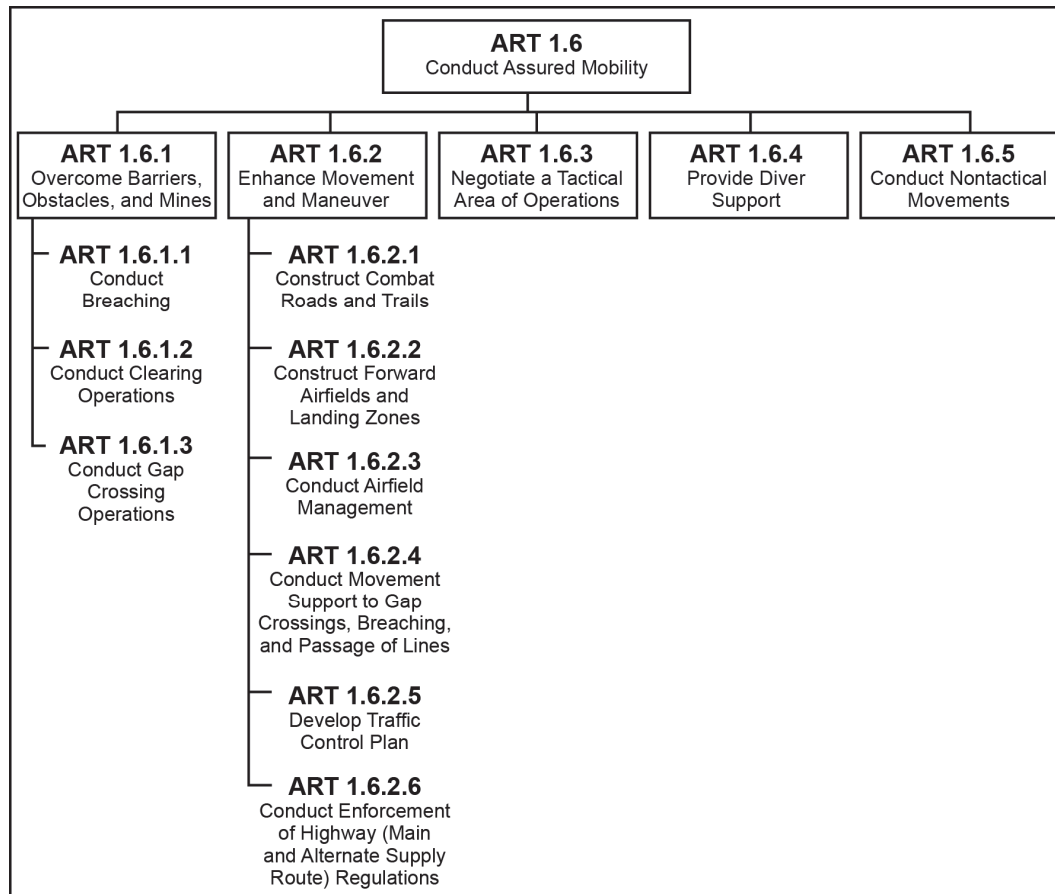
SECTION I – ART 1.1: PERFORM TACTICAL ACTIONS ASSOCIATED WITH FORCE PROJECTION AND DEPLOYMENT



1-1. ∞Force projection is the military element of national power that systemically and rapidly moves military forces in response to requirements of full spectrum operations. Force projection demonstrates the ability of the nation to alert, mobilize, and rapidly deploy combat forces and sustainment units (regular Army, the Army National Guard/Army National Guard of the United States, and the United States Army Reserve forces) to operate effectively anywhere in the world. The ability to rapidly deploy Army forces with sufficient depth and strength to sustain multiple, simultaneous operations contributes to mission accomplishment. (FM 3-35) (CASCOM)

No.	Scale	Measure
01	Yes/No	Unit deployed from its current location to the area of operations per the time-phased force and deployment list.
02	Yes/No	Unit included contractors authorized to accompany the force in its force planning processes.
03	Time	To complete unit mobilization.
04	Time	To complete required training before employment in a theater of operations.
05	Time	To determine available transportation infrastructure and resources.
06	Time	To deploy unit from home or mobilization station to a theater of operations.
07	Time	To redeploy unit from theater of operations to home station or another theater.
08	Percent	Of combat effectiveness of unit when employed in a theater of operations.

SECTION VI – ART 1.6: CONDUCT ASSURED MOBILITY



1-64. Δ Assured mobility is a framework—of processes, actions, and capabilities—that assures the ability of a force to deploy, move, and maneuver where and when desired, without interruption or delay, to achieve the mission. The assured mobility fundamentals—predict, detect, prevent, neutralize, and protect—support the implementation of the assured mobility framework. Freedom of movement and maneuver within the area of operations allows a unit to gain and maintain a position of advantage and achieve decisive results across the spectrum of conflict. Decisive results include denying the enemy freedom of action to attain a position of advantage. Mobility operations are performed as combined arms operations. (ATTP 3-90.4) (USAES)

Note: The term “breaching system” used in this section includes both manual and mechanical means.

No.	Scale	Measure
01	Yes/No	Unit overcame terrain, barriers, and obstacles within the period the operation order specified.
02	Yes/No	Commander and staffs coordinated with higher, adjacent, supported, and supporting units to maintain freedom of movement in the area of operations.
03	Time	That terrain, barriers, obstacles, and mines delayed movement of friendly forces.
04	Time	To conduct route, zone, and area reconnaissance to determine terrain trafficability and the location and boundaries of barriers, obstacles, and minefields.
05	Time	After discovery for staff to disseminate terrain trafficability and barrier, obstacles, and mine data to higher headquarters, laterally, and subordinate units.
06	Time	To reduce lanes through obstacles.

No.	Scale	Measure
07	Time	To conduct successful execution of breach fundamentals—suppress, obscure, secure, reduce, and assault—at the obstacle.
08	Time	To complete mobility activities that improved the unit's capability to cross the terrain, such as applying a rock layer to a combat road and cutting down trees to make a trail.
09	Time	To complete minefield reduction.
10	Time	To move breaching equipment to breach site.
11	Percent	Of obstacles in the area of operations that had been breached.
12	Percent	Of breaching systems that were mission capable.
13	Percent	Of completed engineer efforts designed to enhance the unit's capability to cross terrain.
14	Number	Of friendly and neutral casualties during mobility activities.

ART 1.6.1 OVERCOME BARRIERS, OBSTACLES, AND MINES

1-65. Enable a force to maintain its mobility by reducing, bypassing, or clearing obstacles. An *obstacle* is any obstruction designed or employed to disrupt, fix, turn, or block the movement of an opposing force, and to impose additional losses in personnel, time, and equipment on the opposing force. Obstacles can be natural or man-made, or a combination of both. Naturally existing obstacles can include rivers, mountains, barrier reefs, and cities. Man-made or reinforcing obstacles can include minefields and antitank ditches. A complex obstacle is a combination of different types of individual obstacles that requires more than one reduction technique (explosive, mechanical, or manual) to create a lane through the obstacle. A reinforcing obstacle is an obstacle that is specifically constructed, emplaced, or detonated through military effort. (ATTP 3-90.12) (USAES)

No.	Scale	Measure
01	Yes/No	Unit overcame obstacles and barriers by time specified in operation order.
02	Time	That enemy-emplaced obstacles delay friendly force movement.
03	Time	For staff to disseminate barrier, obstacle, and mine data to subordinate units, higher headquarters, and laterally after discovery.
04	Time	To conduct reconnaissance of obstacle focused on answering obstacle intelligence information requirements—obstacle location, length, width, and depth; obstacle composition (such as wire and mines by type); soil conditions; locations of lanes and bypasses; and the location of enemy direct fire systems.
05	Time	To conduct successful execution of breach fundamentals—suppress, obscure, secure, reduce, and assault—at the obstacle.
06	Time	To reduce lane through obstacles.
07	Time	To complete mine clearing.
08	Time	To move breaching equipment to breach site.
09	Time	To reduce underwater obstacles at crossing sites.
10	Percent	Of obstacles in the area of operations that have been breached.
11	Percent	Of breaching systems that are mission capable.
12	Percent	Of completed engineer efforts designed to enhance the unit's capability to cross terrain.
13	Number	Of friendly and neutral casualties during mobility activities.

ART 1.6.1.1 CONDUCT BREACHING OPERATIONS

1-66. Conduct a combined arms operation to project combat power to the far side of an obstacle. Breaching tenets include intelligence, synchronization, mass, breach fundamentals (suppress, obscure, secure, reduce, and assault), and breach organization (support, assault, and breach forces). ART 1.6.1.1 includes the reduction of minefields and other obstacles. Reduction is the creation of lanes through or over an obstacle to allow an attacking force to pass. The number and width of lanes created varies with the enemy situation,

the assault force's size and composition, and the concept of operations. The lanes must allow the assault force to rapidly pass through the obstacle. The breach force will reduce, proof (if required), mark, and report lane locations and the land-marking method to higher headquarters. Follow-on units will further reduce or clear the obstacle when required. (ATTP 3-90.12) (USAES)

No.	Scale	Measure
01	Yes/No	Unit completed breaching operation by time specified in the operation order.
02	Time	For staff to disseminate barrier, obstacle, and mine data to subordinate units, higher headquarters, and laterally after discovery.
03	Time	That enemy-emplaced obstacles delay friendly force movement.
04	Time	To conduct reconnaissance of barriers, obstacles, and minefields.
05	Time	To conduct successful execution of breach fundamentals—suppress, obscure, secure, reduce, and assault—at the obstacle.
06	Time	To reduce lane through obstacles (one lane per assault company, two lanes per task force).
07	Time	To move breaching equipment to breach site.
08	Percent	Of obstacles in the area of operations that have been breached.
09	Percent	Of breaching systems that are mission capable.
10	Number	Of lanes opened by the breaching operation.
11	Number	Of breaching systems that are mission capable.
12	Number	Of friendly and neutral casualties caused by detonation of explosives.

ART 1.6.1.2 CONDUCT CLEARING OPERATIONS

1-67. Clearing operations (area or route clearance) are conducted to enable the use of a designated area or route. Clearing is the total elimination or neutralization of an obstacle (to include explosives hazard) or portions of an obstacle. Clearing operations are typically not conducted under fire and may be performed after a breaching operation where an obstacle is a hazard or hinders friendly movement or occupation of a location. ART 1.6.1.2.1 (Conduct Area Clearance) focuses on obstacle clearance of a designated area and is typically not a combined arms operation. ART 1.6.1.2.2 (Conduct Route Clearance) focuses on obstacle clearance along a specific route, typically conducted as a combined arms operation, and may be performed in situations where enemy contact is likely. (ATTP 3-90.12) (USAES)

No.	Scale	Measure
01	Yes/No	Unit completed obstacle clearance mission by time specified in operation order.
02	Yes/No	Unit conducted emergency de-mining and unexploded explosive ordnance removal.
03	Yes/No	Unit conducted mapping and survey exercises of mined areas.
04	Yes/No	Unit marked minefields.
05	Yes/No	Unit identified and coordinated emergency de-mining and unexploded explosive ordnance removal requirements.
06	Yes/No	Unit established priorities and conducted de-mining operations.
07	Yes/No	Unit initiated large-scale de-mining and unexploded explosive ordnance removal operations.
08	Time	For staff to disseminate obstacle data to subordinate units, higher headquarters, and laterally after discovery.
09	Time	To conduct reconnaissance of obstacle focused on answering obstacle intelligence information requirements—obstacle location, length, width, and depth; obstacle composition (such as wire, mines by type); soil conditions; locations of lanes and bypasses; and the location of enemy direct fire systems.
10	Time	To plan how to clear the obstacle.
11	Time	To clear the obstacles.
12	Time	To move equipment to the area where the clearance mission takes place.
13	Percent	Of obstacle that has been removed or neutralized.
14	Percent	Of systems committed to the clearance mission that are mission capable.

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No.	Scale	Measure
15	Number	Of lanes opened by the reducing operation.
16	Number	Of systems that are mission capable.
17	Number	Of friendly and neutral casualties during the clearance mission.

ART 1.6.1.2.1 Conduct Area Clearance

1-68. Area clearance is the total elimination or neutralization of an obstacle or portions of an obstacle in a designated area. (ATTP 3-90.12) (USAES)

No.	Scale	Measure
01	Yes/No	Unit completed area clearance mission by time specified in operation order.
02	Time	That obstacles delay friendly force movement.
03	Time	For staff to disseminate obstacle data to subordinate units, to higher headquarters, and laterally after discovery.
04	Time	To conduct area reconnaissance.
05	Time	To plan how to clear the area.
06	Time	To clear the area.
07	Time	To move equipment to the area where the clearance mission takes place.
08	Percent	Of area that has been cleared.
09	Percent	Of systems committed to the clearance mission that are mission capable.
10	Number	Of area clearance systems that are mission capable.
11	Number	Of friendly and neutral casualties during the area clearance mission.

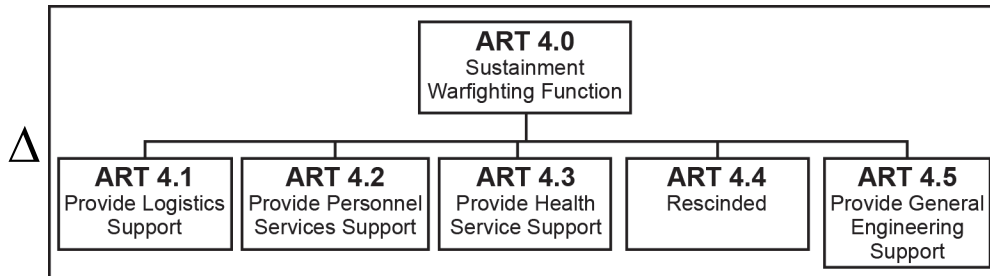
ART 1.6.1.2.2 Conduct Route Clearance

1-69. A route clearance is a combined arms operation conducted to remove mines and other obstacles along preexisting roads and trails. (ATTP 3-90.12) (USAES)

No.	Scale	Measure
01	Yes/No	Unit accomplished route clearance by time specified in operation order.
02	Yes/No	Unit dismantled roadblocks and established checkpoints.
03	Time	That obstacles along the route delay the friendly force movement.
04	Time	For staff to disseminate obstacle data to subordinate units, higher headquarters, and laterally after discovery.
05	Time	To conduct route reconnaissance.
06	Time	To plan how to clear the route.
07	Time	To clear the route.
08	Time	To move equipment from its current location to the route where the clearance mission takes place.
09	Time	To establish security along portion of the route being cleared.

Chapter 4

ART 4.0: The Sustainment Warfighting Function

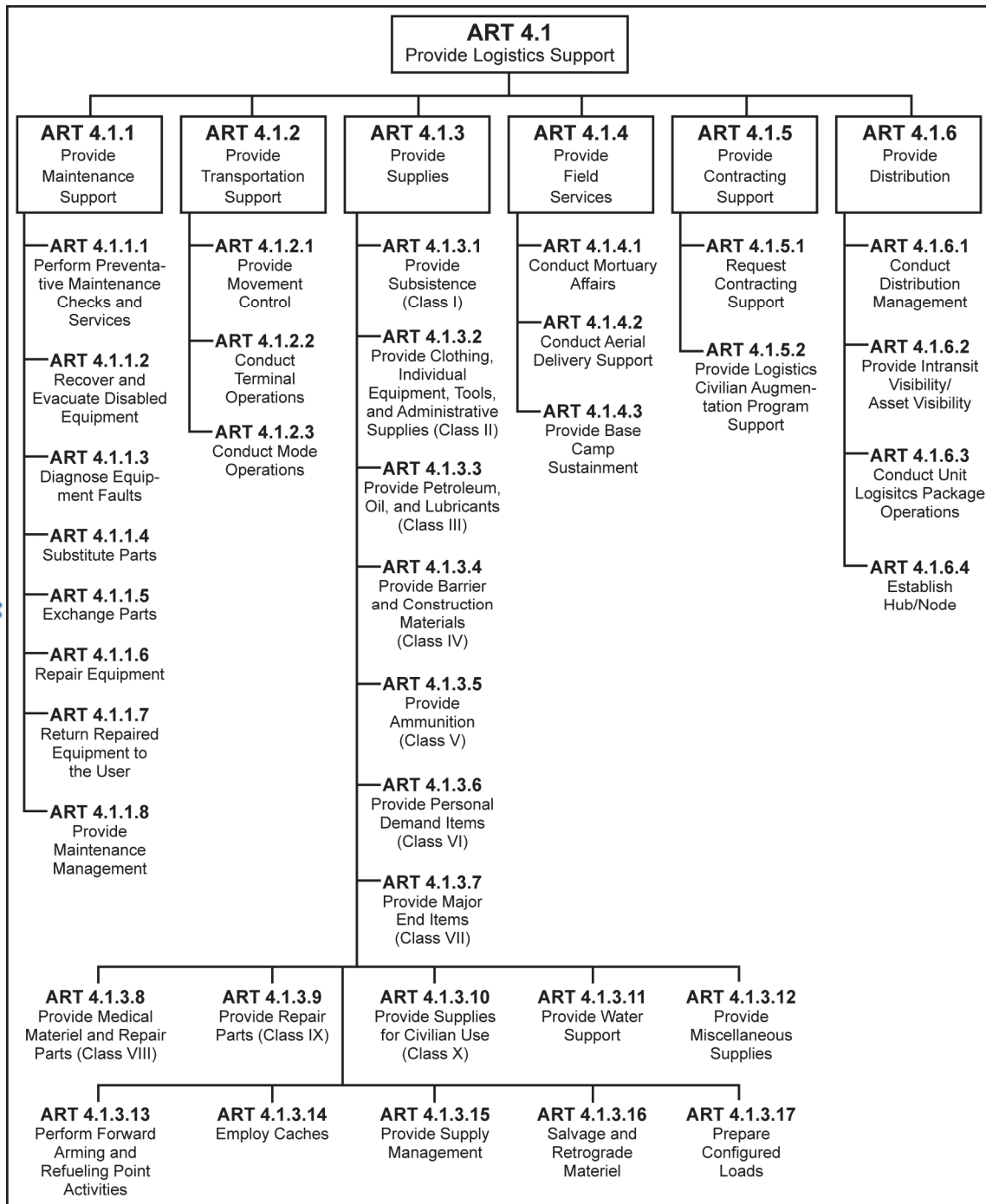


The *sustainment warfighting function* is the related tasks and systems that provide support and services to ensure freedom of action, extend operational reach, and prolong endurance. The endurance of Army forces is primarily a function of their sustainment. Sustainment determines the depth and duration of Army operations. It is essential to retaining and exploiting the initiative. Sustainment is the provision of the logistics, personnel services, and health service support necessary to maintain operations until mission accomplishment. Internment, resettlement, and detainee operations fall under the sustainment warfighting function and include elements of all three major subfunctions. (ADP 3-0) (USACAC)

Note: This task and many of its subordinate tasks encompass environmental considerations.

+ Logistics is the science of planning, preparing, executing, and assessing the movement and maintenance of forces. In its broadest sense, logistics includes the design, development, acquisition, fielding, and maintenance of equipment and systems. Logistics integrates strategic, operational, and tactical support efforts within the joint operations area and schedules the mobilization and deployment of forces and materiel. (FM 4-0) (CASCOM)

SECTION I – ART 4.1: PROVIDE LOGISTICS SUPPORT



4-1. Logistics is the science of planning, preparing, executing, and assessing the movement and maintenance of forces. In its broadest sense, logistics includes the design, development, acquisition,

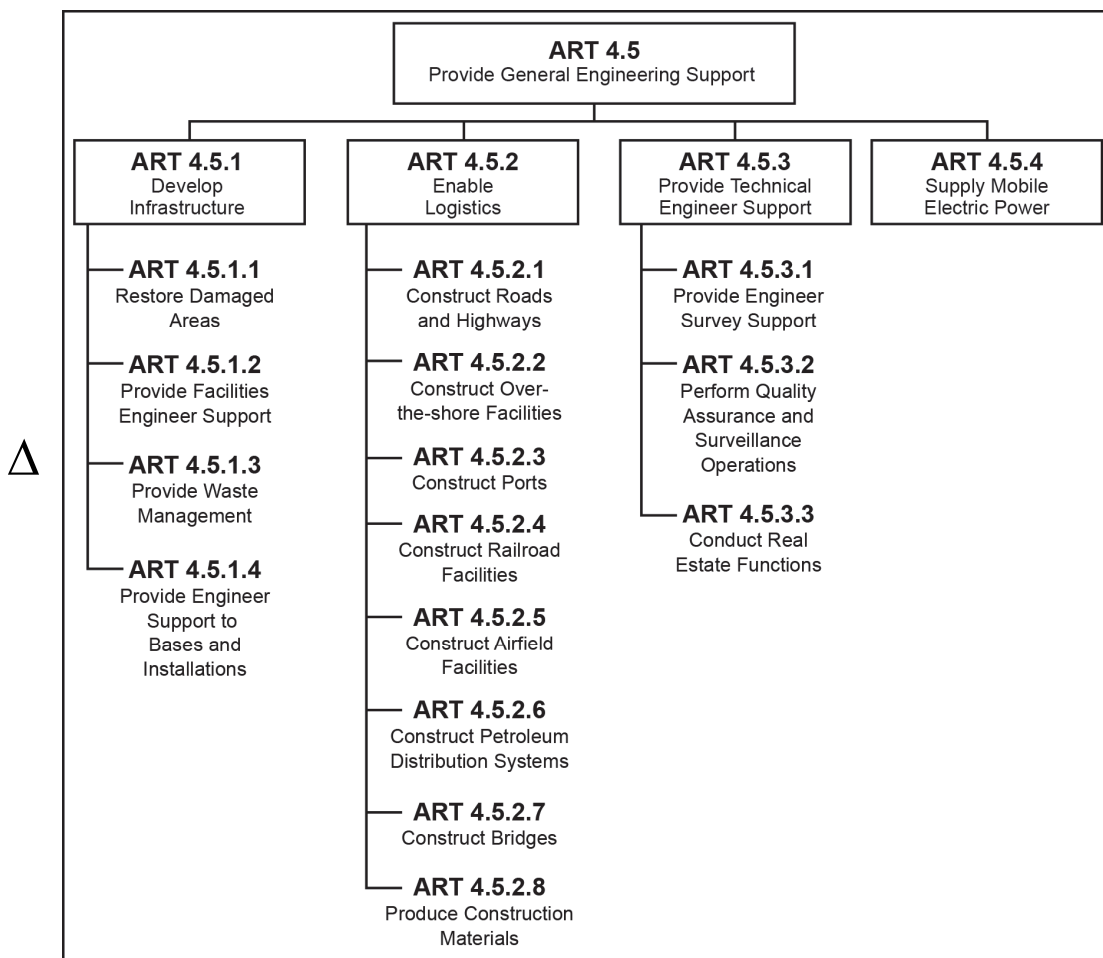
ART 4.0: The Sustainment Warfighting Function

No.	Scale	Measure
09	Percent	Of daily blood reports submitted on time to joint blood program office.
10	Percent	Of blood products in AO required to be disposed of in accordance with applicable environmental regulations.
11	Number	Of units of required blood products per initial admission maintained in AO.
12	Time	To establish for collection, storage, and distribution of blood products in the AO.
13	Time	To initially coordinate blood requirements and distribution of blood and blood products with medical treatment facilities in the AO and with the Joint Blood Program Office.
14	Percent	Of planned blood management capacity produced in the AO.
15	Percent	Of required blood products on hand.
16	Percent	Of blood products in the system that must be disposed.
17	Percent	Of daily blood reports submitted to the Joint Blood Program office within the prescribed time limit.
18	Percent	Of blood products in the system required to be disposed of in accordance with environmental considerations.

Δ SECTION IV – ART 4.4: RESCINDED

4-136. ART 4.4, Conduct Internment/Resettlement Operations, is rescinded and moved to ART 6.13.

△ SECTION V – ART 4.5: PROVIDE GENERAL ENGINEERING SUPPORT



4-137. General engineering is the engineer discipline that is focused on affecting terrain while not in close support to maneuver forces. Tasks most frequently performed under general engineering conditions include the construction, repair, maintenance, and operation of infrastructure, facilities, lines of communications, and bases; protection of natural and cultural resources; modification and repair of terrain; selected explosive hazards activities; and environmental activities. (FM 3-34) (USAES)

No.	Scale	Measure
01	Yes/No	Quantity or quality of general engineering support in the area of operations (AO) did not degrade or delay unit operations.
02	Yes/No	Unit had environmental considerations planning and procedures in place and followed planning and procedures.
03	Time	To assess and repair airfields for aviation operations throughout the AO.
04	Time	To construct and restore damaged utilities in the AO.
05	Time	To refine general engineering support program for AO after receipt of warning order.
06	Time	To identify and marshal forces, equipment, and materials to construct or repair facilities in the AO.
07	Time	To construct or repair damaged lines of communications in the AO to include aerial ports of debarkation and seaports of debarkation.

No.	Scale	Measure
08	Time	Between arrival of building supplies and equipment and construction of sustainment facilities.
09	Time	To complete construction of sustaining base facilities in the AO.
10	Time	To begin building facilities (after final project approval and authorization).
11	Time	To have those bases identified in operation plan or operation order.
12	Time	To validate asset requests.
13	Time	To have assets at requesting location.
14	Percent	Of preventative maintenance activities completed based on the recommended activities from each system's owner's manual or generally accepted maintenance standards such as the American Society of Heating, Refrigerating, and Air Conditioning Engineers (known as ASHRAE).
15	Percent	Of difference between planned general engineering support requirements and actual requirements in the AO.
16	Percent	Of planned general engineering capability performed in the AO.
17	Percent	Of supplies protected from the elements by weatherproof covers.
18	Percent	Of maintenance facilities protected from the elements.
19	Percent	Of overall cargo and equipment deliveries accommodated by sustaining base.
20	Percent	Of required installation throughput capacity available at execution.
21	Percent	Of tasks correctly assigned (correct engineers, location, and time).
22	Percent	Of general engineering support provided by host nation.
23	Number	In square meters of temporary facilities emplaced or constructed per day.
24	Number	In square meters of permanent facilities emplaced or constructed per day.

Δ ART 4.5.1 DEVELOP INFRASTRUCTURE

4-138. The improvement of civil conditions is vital to stability and defense support of civil authorities operations. ART 4.5.1 consists primarily of building, repairing, and maintaining various infrastructure facilities, providing essential services, and improving host-nation capabilities to perform such tasks. This ART primarily supports the commander in improving the conditions of the host-nation population and influencing the host-nation population to support military objectives. This ART does influence the host-nation population to sustain support to U.S. forces. Included in infrastructure development is the engineer's role in the HN population (see FM 3-07). Tasks to improve host-nation infrastructure requires coordination with local or national-level government agencies or ministries that maintain or control infrastructure.. (FM 3-34) (USAES)

No.	Scale	Measure
01	Yes/No	Restoration completed per the schedule the operation order specifies.
02	Yes/No	Commander of the unit restoring a damaged area planned operations, established priorities, and allocated assets.
03	Yes/No	Restoration was per the standards the operation order specified.
04	Yes/No	Environmental considerations planning and procedures were present and being followed.
05	Time	To locate and stockpile repair materials.
06	Time	To refine area damage control plan for the area of operations (AO) after receipt of warning order.
07	Time	To establish communications between the unit restoring the damaged areas and the unit or organization controlling the AO where the area to be restored is located.
08	Time	To perform engineer estimate to identify and prioritize potential tasks and determine required specialized support from engineers, explosive ordnance disposal, and other units; bill for needed materials; locate routes; identify replacement facilities; identify available host-nation assets; and perform other tasks as appropriate.

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No.	Scale	Measure
09	Time	To construct an expedient or alternate facility or bypass while restoration or repair is being completed if required.
10	Time	To repair facilities damaged by combat or natural disaster.
11	Time	To restore damaged utilities in AO.
12	Percent	Of difference between planned area damage control requirements and actual requirements in AO.
13	Percent	Of planned general engineering capability performed in AO.
14	Percent	Of facilities damaged beyond repair.
15	Percent	Of operations in AO degraded, delayed, or modified due to combat or natural disaster damage.
16	Percent	Of general restoration support provided by host nation.
17	Percent	Of restoration effort completed.
18	Number	Of Soldiers and civilians impacted by combat or natural disaster in the AO.
19	Number	And type of facilities damaged by combat or natural disaster in the AO.

Δ ART 4.5.1.1 RESTORE DAMAGED AREAS

4-139. This ART covers how units inspect and repair surface and underwater facilities or restore terrain damaged by combat (such as clear rubble and restore electrical power), natural disaster, environmental accidents, or other causes. (FM 3-34) (USAES)

No.	Scale	Measure
01	Yes/No	Unit completed restoration per the schedule the operation order specified.
02	Yes/No	Commander of the unit restoring a damaged area planned operations, established priorities, and allocated assets.
03	Yes/No	Restoration was per the standards the operation order specified.
04	Yes/No	Unit had environmental considerations planning and procedures in place and followed planning and procedures.
05	Time	To locate and stockpile repair materials.
06	Time	To refine area damage control plan for the area of operations (AO) after receipt of warning order.
07	Time	To establish communications between the unit restoring the damaged areas and the unit or organization controlling the AO where the area to be restored is located.
08	Time	To perform engineer estimate to identify and prioritize potential tasks and determine required specialized support from engineers, explosive ordnance disposal, and other units; bill for needed materials; locate routes; identify replacement facilities; identify available host-nation assets; and perform other tasks as appropriate.
09	Time	To construct an expedient or alternate facility or bypass while restoration or repair is being completed if required.
10	Time	To repair damaged facilities.
11	Time	To restore damaged utilities in the AO.
12	Percent	Of difference between planned area damage control requirements and actual requirements in the AO.
13	Percent	Of planned general engineering capability performed in the AO.
14	Percent	Of facilities damaged beyond repair.
15	Percent	Of operations in the AO degraded, delayed, or modified due to combat or natural disaster damage.
16	Percent	Of general restoration support provided by host nation.
17	Percent	Of restoration effort completed.

ART 4.0: The Sustainment Warfighting Function

No.	Scale	Measure
18	Number	Of Soldiers and civilians impacted by combat or natural disaster in the AO.
19	Number	And type of facilities damaged by combat or natural disaster in the AO.

Δ ART 4.5.1.2 PROVIDE FACILITIES ENGINEER SUPPORT

4-140. This ART covers how units sustain military forces in theater by providing waste management and constructing, managing, and maintaining bases and installations. ART 4.5.1.2 includes the design of facilities. (FM 3-34) (USAES)

No.	Scale	Measure
01	Yes/No	The provision of facilities engineering support did not cause the abandonment, modification, or delay in execution of the unit's chosen course of action.
02	Yes/No	Unit constructed facility systems to plan specifications within allotted time.
03	Yes/No	Facility engineering systems safeguarded the health of Soldiers and noncombatants in the area of operations (AO).
04	Yes/No	Unit had environmental considerations planning and procedures in place and followed planning and procedures.
05	Time	To refine facilities engineering support program in the AO.
06	Time	To evaluate the site for suitability and conditions, identify construction problems and possible courses of action, and update or revise the engineer estimate.
07	Time	To prepare construction directive for facility engineering support facilities and issue it to the construction unit. This directive states the exact assignment, project location, and start and completion times; specifies additional personnel, equipment, and materials available; prioritizes the entire project; and specifies type and frequency of construction reports, time needed for special procurement, and coordination instructions with user agency.
08	Time	To coordinate for and receive engineer assets to perform facility engineer task.
09	Time	To monitor construction and perform quality assurance inspections.
10	Time	To verify accuracy of construction plans and specifications to include ensuring the bill of materials includes all required materials to complete construction.
11	Time	To design new construction requirements.
12	Time	To manage and administer facilities engineering program in the AO.
13	Time	To develop guidance for acquiring, managing, and disposing real estate in the AO.
14	Time	To complete environmental baseline surveys on real estate being considered for acquisition or use by U.S. forces.
15	Time	To inventory installed and personal property located on installations.
16	Time	To maintain facility engineering records.
17	Time	To complete legal and environmental reviews of real estate transactions in the AO.
18	Time	To develop a system for submitting real estate claims in the AO.
19	Percent	Of real estate required to conduct and support unit operations acquired.
20	Percent	Of required real estate and facilities provided by the host nation.
21	Percent	Of difference between planned and actual requirements for facilities engineering in the AO.
22	Percent	Of planned facilities acquired or constructed in the AO.
23	Percent	Of required facilities provided by the host nation.
24	Percent	Of existing facilities modernized in the AO.
25	Percent	Of existing facilities that unit can use in current condition.
26	Percent	Of existing facilities damaged by combat actions or natural disaster.

No.	Scale	Measure
27	Percent	Of nonbattle injuries and disease in the AO attributable to inadequate facility engineer support.
28	Percent	Of each utility's (water, wastewater, power, and natural gas) reliability factor in each base camp.
29	Number	Of kilograms or liters and types of waste, refuse, and hazardous materials produced per day in the AO.
30	Number	And types of facilities constructed or acquired to support unit operations.

Δ ART 4.5.1.3 PROVIDE WASTE MANAGEMENT

4-141. This ART covers how units operate, maintain, or upgrade existing utilities. Units construct, operate, and maintain new utilities systems for the purpose of waste management. ART 4.5.1.3 includes wastewater collection and treatment systems, refuse collection, and disposal. Special consideration is given to disposing hazardous waste. (FM 3-34) (USAES)

No.	Scale	Measure
01	Yes/No	The supported unit was not delayed, disrupted, or prevented from accomplishing its mission. Soldiers and civilians residing in the area of operations (AO) were not placed at risk of injury or disease because of the improper collection, treatment, and disposal of sewage, refuse, and hazardous waste.
02	Yes/No	Unit constructed sewer system to plan specifications within allotted time.
03	Yes/No	Waste management facilities safeguarded the health of Soldiers and noncombatants in the AO.
04	Yes/No	Sewage in the AO stabilized so that it did not overload the disposal medium or ability in lake, stream, or drain field.
05	Yes/No	Unit had environmental considerations planning and procedures in place and followed planning and procedures.
06	Yes/No	Unit considered or included the Overseas Environmental Baseline Guidance Document or final governing standards in construction.
07	Yes/No	Unit used transportation assets to backhaul waste for disposal.
08	Time	To refine waste management program after receipt of warning order.
09	Time	To prepare engineer construction estimate that determines the effort needed to meet the waste management requirements in the AO, assign operational and construction responsibilities, and determine additional personnel and equipment requirements.
10	Time	To evaluate the site for suitability and conditions, identify construction problems and possible courses of action, and update or revise the engineer estimate.
11	Time	To prepare construction directive for a sewage or hazardous treatment facility and issue it to the construction unit. This directive states the exact assignment, project location, and start and completion times; specifies additional personnel, equipment, and materials available; prioritizes the entire project; and specifies type and frequency of construction reports, time needed for special procurement, and coordination instructions with user agency.
12	Time	To coordinate for and receive engineer assets to perform task.
13	Time	To monitor construction and perform quality assurance inspections.
14	Time	To perform location survey to establish permanent benchmarks for vertical control and well-marked points for horizontal control.
15	Time	To perform construction layout survey.
16	Time	To install sheeting and bracing on sewer trenches.
17	Time	To verify accuracy of construction plans and specifications to include ensuring the bill of materials includes all required materials to complete construction.
18	Time	To install or repair plumbing and sewage pipes in facilities.

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No.	Scale	Measure
19	Time	To install lavatories or sinks, water closet, and urinals.
20	Percent	Of sewage or hazardous material produced per day in the AO that are disposed of in a manner that safeguards the health of Soldiers and noncombatants and the environment.
21	Percent	Of difference between planned and actual requirements for waste management in the AO.
22	Percent	Of planned waste management capabilities completed in the AO.
23	Percent	Of required waste management capabilities provided by host nation.
24	Percent	Of existing waste management capabilities modernized in the AO.
25	Percent	Of existing waste management capabilities that unit can use in their current condition.
26	Percent	Of existing waste management capabilities in the AO damaged by combat actions or natural disaster.
27	Percent	Of nonbattle injuries and disease in the AO attributable to inadequate waste management.
28	Percent	Of waste reduced through recycling.
29	Number	Of kilograms and types of hazardous material produced per day in the AO.
30	Number	Of liters of sanitary sewage produced per day in the AO.
31	Number	Of liters of industrial sewage produced per day in the AO.
32	Number	Of liters of storm sewage produced by individual storms in the AO.
33	Number	Of liters of ground water that enters the sewage system per day.
34	Number	Of cesspools constructed in the AO.
35	Number	And capacity of septic tanks constructed in the AO.
36	Number	And capacity of sewage treatment plants constructed in the AO.
37	Number	Of kilograms per day of disinfectants added to chemically treat sewage in the AO.
38	Number	And capacity of sewage lagoons constructed in the AO.
39	Number	Of meters of sewer systems constructed per day in the AO.

Δ ART 4.5.1.4 PROVIDE ENGINEER SUPPORT TO BASES AND INSTALLATIONS

4-142. This ART covers how units manage and maintain or upgrade existing facilities and utilities. Units construct, manage, and maintain new facilities and utility systems for bases and installations. (FM 3-34.400) (USAES)

No.	Scale	Measure
01	Yes/No	The construction, management, and maintenance of bases and installations in the area of operations (AO) contributed toward unit mission accomplishment.
02	Yes/No	Unit determined construction requirements per existing doctrine and regulations.
03	Yes/No	Unit had environmental considerations planning and procedures in place and followed planning and procedures.
04	Time	To plan maintenance and repair of fixed facilities.
05	Time	To determine potential requirements for repairing damage resulting from combat actions and natural disasters.
06	Time	To plan the operation and maintenance or upgrade of existing utilities (such as electrical generating and distribution systems, waste water collection and treatment systems), permanent and semi-permanent water facilities (such as wells for water and water storage systems), and other special utilities systems including cooling and refrigeration, compressed air, and heating systems.
07	Time	To plan and perform fire prevention and protection programs in the AO.
08	Time	To plan refuse collection and disposal.
09	Percent	Of maintenance and repair of facilities that can be performed by unit self-help teams.
10	Percent	Of facilities in the AO meeting initial and temporary standards.

No.	Scale	Measure
11	Number	Of incinerators and landfills operating in the AO.
12	Number	Of metric tons of refuse per day that are recycled in the AO.
13	Number	Of metric tons of hazardous waste per day disposed of per appropriate laws and regulations.
14	Number	And types of ports, bases, and installations in the AO.
15	Number	Of Soldiers supported by bases and installations in the AO.
16	Number	And types of engineer units used for building and maintaining bases and installations located in the AO.
17	Cost	Of base and installation construction, management, and maintenance.

△ ART 4.5.2 ENABLE LOGISTICS

4-143. This ART covers how units construct and maintain land, water, and air routes that connect an operating military force with one or more bases of operations and along which supplies and reinforcements move. Sustainment lines of communications (LOCs) include main and alternate supply routes. ART 4.5.2 includes the production of construction materials such as concrete and asphalt. (FM 3-34.400) (USAES)

No.	Scale	Measure
01	Yes/No	The inability to use LOCs located in the area of operations (AO) degraded or delayed unit operations.
02	Yes/No	Unit developed detailed plans for project.
03	Yes/No	Unit inspected project for quality control and ensured that the project was completed on time.
04	Yes/No	Unit had environmental considerations planning and procedures in place and followed planning and procedures.
05	Time	To reconnoiter to determine how the local environment will affect construction and if existing facilities or natural resources are available near the construction or maintenance site. This includes determining terrain features and their effect on the project; environmental considerations; problems involved in traveling to and from work site; needed materials to keep the job site drained before, during, and after construction; and soil type and effort required to allow vehicle traffic and construction.
06	Time	To coordinate additional personnel, equipment, and critical items.
07	Time	To review available information in construction directive, intelligence reports, and site investigation to develop an operation plan or order.
08	Time	To plan the project including construction estimate, construction directive, and quality control.
09	Time	To prepare construction estimate including preparing a project activity list and a construction sequencing network; preparing materials, equipment, and personnel estimates; determining activity work rates; and preparing critical path.
10	Time	To prepare construction directive and issue it to construction unit. Directive states the exact assignment, project location, and start and completion times; specifies additional personnel, equipment, and materials available; prioritizes the entire project; and specifies type and frequency of construction reports, time needed for special procurement, and coordination instructions with user agency.
11	Time	To monitor construction and perform quality assurance inspections.
12	Time	To perform final inspection of finished construction and turn it over to the user.
13	Time	To construct and maintain sustainment LOCs.
14	Time	That scheduled arrivals in the AO are delayed due to interruption in LOCs (on average).
15	Percent	Of difference between planned and actual requirements for LOC construction and maintenance requirements.

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No.	Scale	Measure
16	Percent	Of force becoming casualties due to enemy action or accidents during construction or repair.
17	Percent	Of increase in the carrying capability of the LOCs due to construction or maintenance of the LOC.
18	Percent	Of planned general engineering capability performed in the AO.
19	Percent	Of personnel in the AO required for building and maintaining LOCs.
20	Percent	Of general engineering support provided by host nation.
21	Number	Of LOCs requiring construction or maintenance in the AO.
22	Number	Of instances of delays in scheduled arrivals due to interruption of LOCs.

△ ART 4.5.2.1 CONSTRUCT ROADS AND HIGHWAYS

4-144. This ART covers how units determine road network requirements, such as classifying roads in the area of operations (AO) per location, trafficability, and degree of permanence, traffic-bearing capabilities, and improvements needed. Units maintain and repair existing roads (such as inspect and supervise, stockpile materials, keep road surfaces in usable and safe condition, prompt repair, correct basic cause of surface failure, and perform maintenance inspections) and construct new roads (such as route reconnaissance, site selection, surveys, drainage, construction, paving, and soil stabilization). (FM 3-34.400) (USAES)

Note: For construction of combat roads and trails to support maneuver of tactical forces, see ART 1.6.2.1 (Construct Combat Roads and Trails).

No.	Scale	Measure
01	Yes/No	The inability to construct or maintain highways and roads in the AO within the time the construction directive specifics degraded or delayed unit operations.
02	Yes/No	Unit developed detailed plans for project.
03	Yes/No	Unit inspected project for quality control and ensured that the road or highway construction project was completed on time.
04	Yes/No	Unit had environmental considerations planning and procedures in place and followed planning and procedures.
05	Time	To reconnoiter to determine how the local environment will affect roads and highway construction and determine if existing facilities or natural resources are available near the construction or maintenance site. This includes determining terrain features and their effect on the project; environmental considerations; problems involved in traveling to and from work site; needed materials to keep the job site drained before, during, and after construction; and soil type and effort required to allow vehicle traffic and construction.
06	Time	To review available information in construction directive, intelligence reports, and site investigation to develop an operation plan or order.
07	Time	To plan the road or highway project. This includes construction estimate, construction directive, and quality control.
08	Time	To prepare a road or highway construction estimate. This includes preparing a project activity list and a construction sequencing network; determining material, equipment, or personnel estimates; determining work rates for activities; and preparing critical path.
09	Time	To prepare road or highway construction directive and issue it to construction unit. Directive states the exact assignment, project location, and start and completion times; specifies additional personnel, equipment, and materials available; prioritizes the entire project; and specifies type and frequency of construction reports, time needed for special procurement, and coordination instructions with user agency.
10	Time	To coordinate additional personnel, equipment, and critical items.

No.	Scale	Measure
11	Time	To monitor construction and perform quality assurance inspections.
12	Time	To perform final inspection of finished road or highway and turn it over to the user.
13	Time	For building roads and highways.
14	Time	That scheduled arrivals in the AO were delayed on the average due to interruptions in roads and highways by combat actions or natural disasters.
15	Percent	Of difference between planned and actual requirements for road and highway construction and maintenance requirements.
16	Percent	Of force becoming casualties due to enemy action or accidents during road and highway construction or repair.
17	Percent	Of increase in the carrying capability of a road or highway due to construction or maintenance.
18	Percent	Of planned road or highway construction or maintenance capability realized in the AO.
19	Percent	Of personnel in the AO required for building and maintaining roads and highways.
20	Percent	Of road and highway construction and repair capability provided by host nation.
21	Percent	Of existing roads and highways in the AO improved.
22	Percent	Of roads and highways in the AO that unit can use in their current condition by unit combat and tactical vehicles.
23	Percent	Of unit operations degraded, delayed, or modified in the AO due to road or highway impassability.
24	Percent	Of roads and highways in the AO damaged by enemy fire or natural disaster.
25	Percent	Of roads upgraded from gravel to asphalt.
26	Number	And types of quarries required to support this task.
27	Number	Of roads and highways in the AO requiring construction or maintenance.
28	Number	Of roads and highways constructed or improved in the AO.
29	Number	Of kilometers of roads and highways constructed or improved in the AO within a given time.
30	Number	Of instances of delays in scheduled arrivals due to interruption of roads and highways in the AO by combat actions or natural disaster.
31	Number	Of instances in which troop movement or sustaining operations were prevented due to road or highway impassability.
32	Number	Of road or highway maintenance inspections performed per month in the AO.

Δ ART 4.5.2.2 CONSTRUCT OVER-THE-SHORE FACILITIES

4-145. This ART covers how units provide construction, repair, and maintenance support to logistics over-the-shore operations. Units construct piers and causeways as well as access and egress routes. Units prepare and stabilize beaches. They provide access to marshalling and storage areas and adjoining logistics over-the-shore sites, which may also need constructing. Units provide road and rail links to existing lines of communications. They construct utility systems and petroleum, oils, and lubricants storage and distribution systems. (FM 5-480) (USAES)

No.	Scale	Measure
01	Yes/No	The inability to construct or maintain over-the-shore facilities within the time the construction directive specifics degraded or delayed unit operations.
02	Yes/No	Unit developed detailed plans for project.
03	Yes/No	Unit inspected over-the-shore facility projects for quality control and ensured that the project was completed on time.
04	Yes/No	Unit had environmental considerations planning and procedures in place and followed planning and procedures.

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No.	Scale	Measure
05	Time	To reconnoiter to determine how the local environment will affect over-the-shore facilities construction and determine if existing facilities or natural resources are available near the construction or maintenance site. This includes determining terrain features and their effect on the project; environmental considerations; problems involved in traveling to and from work site; materials needed to keep the job site drained before, during, and after construction; and soil type and effort required to allow vehicle traffic and construction.
06	Time	To review available information in construction directive, intelligence reports, and site investigation to develop an operation plan or order.
07	Time	To plan the over-the-shore facility project. This includes construction estimate, construction directive, and quality control.
08	Time	To prepare a construction estimate for the over-the-shore facility. This includes preparing a project activity list and a construction sequencing network; preparing material, equipment, or personnel estimates; determining work rates for activities; and preparing critical path.
09	Time	To prepare construction directive for the over-the-shore facility and issue it to the construction unit. Directive states the exact assignment, project location, and start and completion times; specifies additional personnel, equipment, and materials available; prioritizes the entire project; and specifies type and frequency of construction reports, time needed for special procurement, and coordination instructions with user agency.
10	Time	To coordinate additional personnel, equipment, and critical items.
11	Time	To monitor construction and perform quality assurance inspections.
12	Time	To perform final inspection of finished over-the-shore facility and turn it over to the user.
13	Time	For building and maintaining over-the-shore facilities.
14	Time	That scheduled arrivals in the area of operations (AO) were delayed (on average) due to interruptions in the construction and maintenance of over-the-shore facilities by combat actions or natural disasters.
15	Percent	Of difference between planned and actual requirements for the construction or maintenance of over-the-shore facilities in the AO.
16	Percent	Of force that became casualties due to enemy action or accidents during the construction or maintenance of over-the-shore facilities.
17	Percent	Of increase in the throughput capability of a surface port due to the construction or maintenance of over-the-shore facilities.
18	Percent	Of planned construction or maintenance capability for over-the-shore facilities completed in the AO.
19	Percent	Of personnel in the AO required for building and maintaining over-the-shore facilities.
20	Percent	Of over-the-shore facilities in the AO damaged by enemy fire or natural disaster.
21	Percent	Of over-the-shore facilities in the AO that unit can use in their current condition.
22	Percent	Of unit operations degraded, delayed, or modified in the AO due to an inability to use existing over-the-shore facilities.
23	Percent	Of over-the-shore construction or repair capability provided by host nation.
24	Percent	Of existing over-the-shore facilities improved in the AO.
25	Percent	Of existing logistics over-the-shore facilities connected to existing roads, pipelines, or railroads.
26	Percent	Of supplies lost or destroyed during logistics over-the-shore offload activities in the AO.
27	Number	Of over-the-shore facilities in the AO requiring construction or maintenance.
28	Number	And types of over-the-shore facilities such as piers, causeways, and marshaling or storage sites constructed or improved in the AO.
29	Number	And types of over-the-shore facilities in the AO damaged by enemy fire or natural disaster.

No.	Scale	Measure
30	Number	Of meters of piers, causeways, and beaches constructed, improved, or stabilized in the AO within a given time.
31	Number	Of instances of delays in scheduled arrivals due to the destruction or damage of over-the-shore facilities in the AO by combat actions or natural disaster.
32	Number	Of instances that troop movement or sustaining operations were prevented due to an inability to use over-the-shore facilities.
33	Number	Of port facility inspections performed per month in the AO.

Δ ART 4.5.2.3 CONSTRUCT PORTS

4-146. This ART covers how units construct and rehabilitate ship unloading and cargo handling facilities in the area of operations (AO). Repair and maintenance can include emergency repair, major repair, rehabilitation of breakwater structures, and expedients. (FM 5-480) (USAES)

No.	Scale	Measure
01	Yes/No	The inability to construct or maintain seaport facilities within the time the construction directive specifics degraded or delayed unit operations.
02	Yes/No	Unit developed detailed plans for project.
03	Yes/No	Unit inspected seaport projects for quality control and ensured the project was completed on time.
04	Yes/No	Unit had environmental considerations planning and procedures in place and followed planning and procedures.
05	Time	To review available information in construction directive, intelligence reports, and site investigation to develop an operation plan or order.
06	Time	To plan the seaport construction project. This includes construction estimate, construction directive, and quality control.
07	Time	To reconnoiter to determine how the local environment will affect the construction and maintenance of seaports. This includes determining if existing facilities or natural resources are available near the work site; terrain features and their effects on the project; environmental considerations; problems involved in traveling to and from work site; materials needed to keep the job site drained before, during, and after construction; and soil type and effort required to allow vehicle traffic and construction.
08	Time	To coordinate additional personnel, equipment, and critical items.
09	Time	To monitor construction and perform quality assurance inspections.
10	Time	To perform final inspection of finished seaport and turn it over to the user.
11	Time	For building and maintaining port facilities.
12	Time	To prepare a construction estimate for the seaport. This includes preparing a project activity list and a construction sequencing network; preparing material, equipment, and personnel estimates; determining work rates for activities; and preparing a critical path.
13	Time	To prepare construction directive for the seaport and issue it to the construction unit. This directive states the exact assignment, project location, and start and completion times; specifies additional personnel, equipment, and materials available; prioritizes the entire project; and specifies type and frequency of construction reports, time needed for special procurement, and coordination instructions with user agency.
14	Percent	Of difference between planned and actual requirements for the construction or maintenance of port facilities in the AO.
15	Percent	Of force that became casualties due to enemy action or accidents during the construction or maintenance of port facilities.
16	Percent	Of increase in the throughput capability of a surface port due to the construction or maintenance of port facilities.
17	Percent	Of planned construction or maintenance capability for port facilities completed in the AO.

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No.	Scale	Measure
18	Percent	Of personnel in the AO required for building and maintaining port facilities.
19	Percent	Of port construction or repair capability provided by host nation.
20	Percent	Of existing port facilities improved in the AO.
21	Percent	Of port facilities in the AO that unit can use in their current condition.
22	Percent	Of unit operations degraded, delayed, or modified in the AO due to an inability to use existing port facilities.
23	Percent	Of port facilities in the AO damaged by enemy fire or natural disaster.
24	Percent	Of existing logistic port facilities connected to existing roads, pipelines, or railroads.
25	Percent	Of supplies lost or destroyed during logistic offload activities in the AO.
26	Percent	Of underwater habitat destroyed.
27	Number	Of port facilities in the AO requiring construction or maintenance.
28	Number	And types of port facilities—such as piers, causeways, cranes, and marshaling or storage sites—constructed or improved in the AO.
29	Number	And types of port facilities in the AO damaged by enemy fire or natural disaster.
30	Number	Of meters of breakwater, piers, and causeways, constructed or improved in the AO within a given time.
31	Number	Of port facility inspections performed per month in the AO.
32	Number	Of instances of delays in scheduled arrivals due to the destruction or damage of port facilities in the AO by combat actions or natural disaster.
33	Number	Of instances in which troop movement or sustaining operations were prevented due to an inability to use port facilities.

Δ ART 4.5.2.4 CONSTRUCT RAILROAD FACILITIES

4-147. This ART covers how units provide construction, major rehabilitation, and major repair of railroads. ART 4.5.2.4 includes all design, new construction, and modification of existing railroads to meet military traffic needs. (FM 3-34.400) (USAES)

No.	Scale	Measure
01	Yes/No	The inability to construct or maintain railroad facilities within the time the construction directive specifics degraded or delayed unit operations.
02	Yes/No	Unit developed detailed plans for project.
03	Yes/No	Unit inspected railroad projects for quality control and ensured the project was completed on time.
04	Yes/No	Unit had environmental considerations planning and procedures in place and followed planning and procedures.
05	Time	To reconnoiter to determine how the local environment will affect the construction and maintenance of railroad facilities. This includes determining if existing facilities or natural resources are available near the work site; terrain features and their effect on the project; environmental considerations; problems involved in traveling to and from work site; materials needed to keep the job site drained before, during, and after construction; and soil type and effort required to allow vehicle traffic and construction.
06	Time	To review available information in construction directive, intelligence reports, and site investigation to develop an operation plan or order.
07	Time	To plan the railroad facility construction project—includes construction estimate, construction directive, and quality control.
08	Time	To prepare a construction estimate for railroad facilities. This includes preparing a project activity list and a construction sequencing network; preparing material, equipment, or personnel estimates; determining work rates for activities; and preparing a critical path.

No.	Scale	Measure
09	Time	To prepare construction directive for the railroad facility and issue it to the construction unit. This directive states the exact assignment, project location, and start and completion times; specifies additional personnel, equipment, and materials available; prioritizes the entire project; and specifies type and frequency of construction reports, time needed for special procurement, and coordination instructions with user agency.
10	Time	To coordinate additional personnel, equipment, and critical items.
11	Time	To monitor construction and perform quality assurance inspections.
12	Time	To perform final inspection of finished railroad facilities and turn it over to the user.
13	Time	To construct or maintain railroad facilities.
14	Time	Of delay in scheduled arrivals in the area of operations (AO) (on average) due to interruptions in the construction or maintenance of railroad facilities by combat actions or natural disasters.
15	Percent	Of difference between planned and actual requirements for the construction or maintenance of railroad facilities in the AO.
16	Percent	Of force that became casualties due to enemy action or accidents during the construction or maintenance of railroad facilities.
17	Percent	Of increase in the throughput capability of a railroad port due to the construction or maintenance of railroad facilities.
18	Percent	Of planned construction or maintenance capability for railroad facilities completed in the AO.
19	Percent	Of personnel in the AO required for building and maintaining railroad facilities.
20	Percent	Of railroad construction or repair capability provided by host nation.
21	Percent	Of existing railroad facilities improved in the AO.
22	Percent	Of railroad facilities in the AO that unit can use in current condition.
23	Percent	Of unit operations degraded, delayed, or modified in the AO due to an inability to use existing railroad facilities.
24	Percent	Of railroad facilities in the AO damaged by enemy fire or natural disaster.
25	Percent	Of existing logistic facilities connected to existing railroads.
26	Number	Of railroad facilities in the AO requiring construction or maintenance.
27	Number	And types of railroad facilities constructed or improved in the AO.
28	Number	And types of railroad facilities in the AO damaged by enemy fire or natural disaster.
29	Number	Of kilometers of rail lines constructed or improved in the AO within a given time.
30	Number	Of instances of delays in scheduled arrivals due to the destruction or damage of railroad facilities in the AO by combat actions or natural disaster.
31	Number	Of instances in which troop movement or sustaining operations were prevented due to an inability to use rail facilities.
32	Number	Of tons per day of supplies transported.
33	Number	Of railroad facility inspections performed per month in the AO.

Δ ART 4.5.2.5 CONSTRUCT AIRFIELD FACILITIES

4-148. This ART covers how units provide for planning military airfields; new airfield and heliport construction, expansion, and rehabilitation; and maintenance and repair of airfields and heliports in the area of operations (AO). (FM 5-430-00-2) (USAES)

No.	Scale	Measure
01	Yes/No	The inability to construct or expand airfield facilities within the time the construction directive specifies degraded or delayed unit operations.
02	Yes/No	Airfield facilities supported the aircraft for which they were designed.
03	Yes/No	Unit inspected airfield or heliport projects for quality control.

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No.	Scale	Measure
04	Yes/No	Unit completed airfield or helipad project on time.
05	Yes/No	Unit had environmental considerations planning and procedures in place and followed planning and procedures.
06	Time	To prepare engineer construction estimate that determines the effort to meet the requirements, assign operational and construction responsibilities, and determine additional personnel and equipment requirements.
07	Time	To prepare construction directive for the airfield or heliport and issue it to the construction unit. This directive states the exact assignment, project location, and start and completion times; specifies additional personnel, equipment, and materials available; prioritizes the entire project; and specifies type and frequency of construction reports, time needed for special procurement, and coordination instructions with user agency.
08	Time	To evaluate the site for suitability and conditions, integrate environmental considerations, identify construction problems and possible courses of action, and update or revise the engineer estimate.
09	Time	To coordinate for and receive engineer assets to perform task.
10	Time	To monitor construction and perform quality assurance inspections.
11	Time	To perform location survey to establish permanent benchmarks for vertical control and well-marked points for horizontal control.
12	Time	To perform construction layout survey.
13	Time	To perform earthwork estimation that calculates the earthwork volume or quantity, determines final grade balancing of cuts and fills, and determines most economical haul of materials.
14	Time	To design a storm-drainage system.
15	Time	To conduct clearing, grubbing, and stripping operations.
16	Time	To conduct subgrade and base-course operations.
17	Time	To stabilize soil and provide dust control if required.
18	Time	To install surface matting if required.
19	Time	To conduct airfield marking operations.
20	Time	To install airfield lighting.
21	Time	To mark all obstructions.
22	Time	To prepare and submit status, progress, or completion reports to higher headquarters.
23	Time	To establish job site security.
24	Time	That scheduled arrivals in the AO were delayed on average due to interruptions in the construction, expansion, or maintenance of airfield or heliport facilities by combat actions or natural disasters.
25	Percent	Of difference between planned and actual requirements for the construction or maintenance of airfields or heliports and their associated support facilities in the AO.
26	Percent	Of force becoming casualties due to enemy action or accidents during the construction or maintenance of airfields or heliports.
27	Percent	Of increase in the throughput capability of an airfield or heliport due to the construction or maintenance of aviation support facilities.
28	Percent	Of planned airfield or heliport construction or maintenance capability completed.
29	Percent	Of personnel in the AO required for building and maintaining airfields, heliports, and their associated aviation support facilities.
30	Percent	Of airfield or helipad construction or repair capability provided by host nation.
31	Percent	Of existing airfields or heliports and their associated aviation support facilities improved in the AO.
32	Percent	Of existing airfields or heliports and their associated aviation support facilities in the AO that the unit can use in their current condition.

No.	Scale	Measure
33	Percent	Of unit operations degraded, delayed, or modified in the AO due to an inability to use existing airfields or helipads.
34	Percent	Of airfield or heliport and aviation support facilities in the AO damaged by enemy fire or natural disaster.
35	Percent	Of existing logistic facilities with access to existing airfields or heliports.
36	Number	Of airfields constructed, expanded, or rehabilitated in the AO.
37	Number	Of heliports constructed or rehabilitated in the AO.
38	Number	Of airfields or heliports and aviation support facilities in the AO requiring construction or maintenance.
39	Number	And types of airfields or heliports and associated aviation support facilities in the AO damaged by enemy fire or natural disaster.
40	Number	Of meters of airfield runway constructed, improved, or repaired in the AO within a given time.
41	Number	Of instances of delays in scheduled arrivals due to the destruction or damage of airfields and helipads in the AO by combat actions or natural disaster.
42	Number	Of instances in which troop movement or sustaining operations were prevented due to an inability to use airfields or helipads and associated aviation support facilities.
43	Number	Of tons per day of supplies transported by aviation platforms in the AO.
44	Number	Of passengers per day transported by aviation in the AO.
45	Number	Of inspections of aviation support infrastructure completed per month in the AO.

△ ART 4.5.2.6 CONSTRUCT PETROLEUM DISTRIBUTION SYSTEMS

4-149. This ART covers how units provide construction, major rehabilitation, and major repair of water and petroleum pipelines and tank farms. ART 4.5.2.6 includes all design, new construction, and modification of existing pipelines and tank farms to meet military traffic needs. This task will always include environmental considerations. (FM 5-482) (USAES)

No.	Scale	Measure
01	Yes/No	The inability for building and maintaining pipelines and tank farms within the time the construction directive specifics degraded or delayed unit operations.
02	Yes/No	Size of storage tanks or tank farm was adequate for anticipated demand.
03	Yes/No	Unit constructed the system per plans and specifications.
04	Yes/No	The system was operational and leak proof.
05	Yes/No	Unit buried pipes below frost line and deep enough that vehicle movement did not damage system.
06	Yes/No	Unit observed environmental regulations or considerations during construction or repair of petroleum distribution systems.
07	Yes/No	Unit had environmental considerations planning and procedures in place and followed planning and procedures.
08	Time	To respond to reportable tasks.
09	Time	To evaluate the site for suitability and conditions, identify construction problems and possible courses of action, and update or revise the engineer estimate.
10	Time	To prepare engineer construction estimate that determines the effort needed to meet the requirements, assign operational and construction responsibilities, and determine additional personnel and equipment requirements.
11	Time	To prepare construction directive for the pipeline or tank farm and issue it to the construction unit. This directive states the exact assignment, project location, and start and completion times; specifies additional personnel, equipment, and materials available; prioritizes the entire project; and specifies type and frequency of construction reports, time needed for special procurement, and coordination instructions with user agency.

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No.	Scale	Measure
12	Time	To coordinate for and receive engineer assets to perform task.
13	Time	To monitor construction and perform quality assurance inspections.
14	Time	To perform location survey to establish permanent benchmarks for vertical control and well-marked points for horizontal control.
15	Time	To perform construction layout survey.
16	Time	To perform earthwork estimation that calculates the earthwork volume or quantity, determines final grade balancing of cuts and fills, and determines most economical haul of materials.
17	Time	To excavate trenches per construction or repair plans.
18	Time	To lay pipe, make connections, install valves, and perform pressure tests.
19	Time	To conduct backfill and tamping operations.
20	Time	To construct pipeline supports and bracing for locations where the pipeline must be above ground.
21	Time	To construct pipeline suspension bridges for locations where the pipeline must be above ground.
22	Time	To install pipeline pumping stations.
23	Time	To ensure water distribution system functions properly.
24	Time	To install storage tanks or liquid storage facilities.
25	Time	To install underwater pipeline.
26	Percent	Of difference between planned and actual requirements for water and petroleum pipelines and tank farms in an area of operations (AO).
27	Percent	Of planned construction or repair program completed.
28	Number	Of pipelines constructed, expanded, or rehabilitated in the AO.
29	Number	Of tank farms constructed or rehabilitated in the AO.
30	Number	Of kilometers of pipelines and tank farms in the AO required to support unit operations.
31	Number	Of pipelines and tank farms and associated support facilities in the AO damaged by enemy fire or natural disaster.
32	Number	Of meters of pipeline constructed, improved, or repaired in the AO within a given time.
33	Number	Of liters or metric tons of water or bulk petroleum products currently stored in tank farms in the AO.
34	Number	Of instances in which troop movement or sustaining operations were prevented due to lack of water or bulk petroleum products.
35	Number	Of liters or metric tons of supplies transported per day by pipelines in the AO.
36	Number	Of pipeline, tank, or pumping station inspections performed per month in the AO.
37	Number	Of casualties because of accidents during the construction, repair, or maintenance of pipelines and tank farms.
38	Number	Of incidents that result in the release of hazardous material because of accidents or spills resulting from combat actions.
39	Number	Of liters or metric tons of hazardous material released.
40	Number	Of water wells drilled in the AO.
41	Number	Of leaks per day.

Δ ART 4.5.2.7 CONSTRUCT BRIDGES

4-150. This ART covers how units Provide construction and repair of bridges. ART 4.5.2.7 includes all design, new construction, and modification of existing bridges to meet military traffic needs. (FM 3-34.343) (USAES)

No.	Scale	Measure
01	Yes/No	The inability for building and maintaining standard and nonstandard fixed bridges within the time the construction directive specifics degraded or delayed unit operations.
02	Yes/No	Fixed bridges supported the traffic loads for which they were designed.
03	Yes/No	Unit inspected fixed bridge projects for quality control.
04	Yes/No	Unit completed bridge construction projects on time.
05	Yes/No	Unit had environmental considerations planning and procedures in place and followed planning and procedures.
06	Time	To prepare engineer construction estimate that determines the effort needed to meet gap crossing requirements, assign operational and construction responsibilities, and determine additional personnel and equipment requirements.
07	Time	To evaluate proposed bridge site for suitability and conditions, identify construction problems and possible courses of action, and update or revise the engineer estimate.
08	Time	To adapt standard fixed bridge construction designs to specific situation.
09	Time	To coordinate for and receive engineer assets to perform task.
10	Time	To prepare construction directive or operation order to construct or maintain a fixed bridge. This directive states exact assignment, project location, and start and completion times; specifies additional personnel, equipment, and materials available; prioritizes projects; and specifies type and frequency of construction reports, time needed for special procurement, and required coordination with user agency.
11	Time	To perform location survey to establish permanent benchmarks for vertical control and well-marked points for horizontal control.
12	Time	To monitor construction and perform quality assurance inspections.
13	Time	To perform construction layout survey.
14	Percent	Of difference between planned and actual requirements for fixed bridge construction or maintenance in the area of operations (AO).
15	Percent	Of force becoming casualties due to enemy actions or accidents while building or maintaining fixed bridges.
16	Percent	Of increase in the throughput capability of a line of communications or main supply route because of the replacement of tactical assault bridges with fixed bridges.
17	Percent	Of planned fixed bridge construction or maintenance capability completed in the AO.
18	Percent	Of personnel in the AO required for building and maintaining fixed bridges.
19	Percent	Of fixed bridge construction or repair capability provided by host nation.
20	Percent	Of existing fixed bridges repaired or improved in the AO.
21	Percent	Of existing fixed bridges in the AO that the unit can use in current condition.
22	Percent	Of unit operations degraded, delayed, or modified in the AO due to an inability to use existing fixed bridges.
23	Percent	Of fixed bridges in the AO damaged by enemy fire or natural disaster.
24	Percent	Of tactical assault bridging in the AO replaced by fixed bridges.
25	Number	Of fixed bridge kits available for employment in the AO.
26	Number	Of fixed bridges constructed, improved, or rehabilitated in the AO.
27	Number	Of existing fixed bridges in the AO requiring maintenance or repair.
28	Number	And types of fixed bridges in the AO damaged by enemy fire or natural disaster.
29	Number	Of meters of gaps crossed by fixed bridges constructed, improved, or repaired in the AO within a given time.
30	Number	Of instances of delays in scheduled arrivals due to the destruction or damage of fixed bridges in the AO by combat actions or natural disaster.
31	Number	Of instances in which troop movement or sustaining operations were prevented due to an inability to use a fixed bridge.

No.	Scale	Measure
32	Number	Of tons per day of bridge construction supplies required in the AO.
33	Number	Of inspections of fixed bridges performed per month in the AO.

Δ ART 4.5.2.8 PRODUCE CONSTRUCTION MATERIALS

4-151. This ART covers how units produce limited types of construction materials to support military operations. (FM 3-34.400) (USAES)

No.	Scale	Measure
01	Yes/No	Procedures to provide construction material production support did not negatively affect supported unit's ability to perform its missions.
02	Yes/No	Unit had environmental considerations planning and procedures in place and followed planning and procedures.
03	Time	To reconnoiter to evaluate the site for suitability and conditions as well as identify problems and possible courses of action.
04	Time	Required to set up quarry operations.
05	Time	Required to set up asphalt production operations.
06	Percent	Of required production rate of concrete delivered in the area of operations (AO) .
07	Percent	Of required production rate of mineral product delivered in the AO.
08	Percent	Of required production rate of asphalt delivered in the AO.
09	Number	Of cubic yards of concrete produce per day in the AO.
10	Number	Of tons of asphalt produce per day in the AO.
11	Number	Of tons of mineral products produce per day in the AO.

Δ ART 4.5.3 PROVIDE TECHNICAL ENGINEER SUPPORT

4-152. This ART covers how units provide technical support to engineering services in the area of operations (AO). ART 4.5.3 includes quality assurance and control inspections, materials testing, and geodetic and construction surveying. Technical engineering provides oversight to the regulatory construction, safety, and environmental standards. Quality control for construction projects and facilities upgrades includes planning, designing, and monitoring the construction process to achieve a desired end state. This ART also includes acquiring, maintaining, and disposing of real property. (FM 5-412) (USAES)

No.	Scale	Measure
01	Yes/No	Engineer construction support provided the supported unit in accomplishing its mission in the area of operations (AO).
02	Yes/No	Unit had environmental considerations planning and procedures in place and followed planning and procedures.
03	Time	To refine general engineering service program for the AO after receipt of warning order.
04	Time	To prepare engineer construction estimate that determines the effort needed to meet the requirements, assign operational and construction responsibilities, and determine additional personnel and equipment requirements.
05	Time	To establish demobilization camps.
06	Time	To reconnoiter to evaluate the site for suitability and conditions, identify construction problems and possible courses of action, and update or revise the engineer estimate.
07	Time	To prepare construction directive for the construction or renovation of fixed facilities and issue it to the construction unit. This directive states the exact assignment, project location, and start and completion times; specifies additional personnel, equipment, and materials available; prioritizes the entire project; and specifies type and frequency of construction reports, time needed for special procurement, and coordination instructions with user agency.
08	Time	To coordinate for and receive engineer assets to perform task.

No.	Scale	Measure
09	Time	To monitor construction and perform quality assurance inspections.
10	Time	To perform location survey to establish permanent benchmarks for vertical control and well-marked points for horizontal control.
11	Time	To perform construction layout survey.
12	Time	To develop concept of engineer construction support after receipt of warning order.
13	Time	Between arrival of building supplies and equipment and construction of sustainment facilities in the AO.
14	Time	To decommission demobilization camps.
15	Percent	Of difference between planned construction report requirements and actual requirements in the AO.
16	Percent	Of planned engineer construction support capability realized in the AO.
17	Percent	Of engineer construction support provided by host nation.
18	Percent	Of engineer construction projects damaged by combat action or natural disaster.
19	Percent	Of preventative maintenance activities completed based on the recommended activities from each systems owner's manual or generally accepted maintenance standards such as the American Society of Heating, Refrigerating, and Air Conditioning Engineers.
20	Percent	Of permanent facilities emplaced or constructed.
21	Number	Of water wells drilled in the AO.
22	Number	Of storage facilities constructed in the AO.
23	Number	Of pipelines constructed in the AO.
24	Number	Of fixed facilities constructed or renovated in the AO.
25	Number	Of square meters of temporary storage facilities emplaced or constructed per day.
26	Number	Of facilities holding enemy prisoners of war per current international conventions and standards.

Δ ART 4.5.3.1 PROVIDE ENGINEER SURVEY SUPPORT

4-153. This ART covers how units use mechanical or electronic systems to determine dimensional relationships—such as locations, horizontal distances, elevations, directions, and angles—on the earth's surface. ART 4.5.3.1 includes airfield surveys and obstacle evaluation assessments within airfield operational surfaces. (FM 3-34.400) (USAES)

No.	Scale	Measure
01	Yes/No	Unit completed survey by time specified in order.
02	Yes/No	Survey order detailed the priorities and accuracies required by the requesting unit.
03	Time	To plan survey operation to include traverse, triangulation, and three-point resection.
04	Time	To prepare for survey operation.
05	Time	To execute survey operation.
06	Time	To enter a new survey control point into the database.
07	Time	To update survey control point in the database.
08	Time	From requesting information to providing desired survey information to units.
09	Percent	Of accuracy of survey operation.
10	Percent	Of accuracy of survey control available.
11	Percent	Of positioning and azimuth determining systems operational.
12	Number	Of positioning and azimuth determining systems available.

Δ ART 4.5.3.2 PERFORM QUALITY ASSURANCE AND SURVEILLANCE OPERATIONS

4-154. The government performs quality assurance and surveillance operations to determine that engineer-related contract requirements and specifications are met. Quality assurance and surveillance operations ensure products meet quality and safety standards before acceptance from contractors, during transfer between government agencies, or when issued to users. Quality assurance and surveillance operations ensure that materials meet the critical construction tolerances and standards. (FM 5-412) (USAES)

Note: Quality assurance and surveillance operations include planning, designing and monitoring the construction process to achieve a desired end state.

No.	Scale	Measure
01	Yes/No	Unit inspected project for compliance with appropriate standards and completion in accordance with the established timeline and quality assurance and surveillance plan.
02	Yes/No	Unit quality control and quality assurance program did not delay project.
03	Time	To monitor construction and conduct quality assurance inspections.
04	Time	To perform final inspection of finished project and turn over to the user.
05	Time	To coordinate inspection and quality surveillance of contracted project specifications.
06	Time	To monitor contractor performance.
07	Time	To provide technical advice and assistance to staffs, subordinate units, and contracting officers' representatives.
08	Percent	Of construction material analysis completed to ensure compliance to project specifications.
09	Percent	Of soils analysis completed to ensure compliance to construction project specifications.
10	Percent	Of soil samples analyzed to ensure compliance to construction project specifications.

Δ ART 4.5.3.3 CONDUCT REAL ESTATE FUNCTIONS

4-155. This ART covers how units furnish technical real estate guidance and perform additional real estate duties. (FM 3-34) (USAES)

No.	Scale	Measure
01	Yes/No	The acquisition, management, and disposition of real estate in the area of operations (AO) did not cause the abandonment, modification, or delay in execution of the unit's chosen course of action.
02	Yes/No	Unit had environmental considerations planning and procedures in place and followed planning and procedures.
03	Time	To acquire, manage, administer, and dispose of real estate in the AO.
04	Time	To develop guidance for the acquisition, management, and disposition of real estate in the AO.
05	Time	To complete environmental baseline surveys on real estate being considered for acquisition or use by U.S. forces.
06	Time	To inventory installed and personal property located on installations.
07	Time	To maintain real estate records.
08	Time	To complete legal and environmental reviews of real estate transactions in the AO.
09	Time	To develop a system for submitting real estate claims in the AO.
10	Percent	Of real estate required to conduct and support unit operations acquired.
11	Percent	Of required real estate and facilities provided by host nation.
12	Number	Of real estate teams operating in the AO.
13	Number	Of hectares of real estate acquired, managed, or disposed of in an AO within a given time.
14	Number	Of property claims submitted in the AO within a given time.

No.	Scale	Measure
15	Cost	Of real estate restoration activities necessary to dispose of real estate in the AO.
16	Cost	Of claims for damages to real estate in the AO.
17	Cost	Of rent for the use of real estate in the AO.

△ ART 4.5.4 SUPPLY MOBILE ELECTRIC POWER

4-156. This ART covers how units supply electric power generation and distribution to military units through mobile generation and a tactical distribution grid system. ART 4.5.4 includes power production, power distribution, and power management. (FM 3-34.480) (USAES)

Note: ART 7.3.5 (Support Economic and Infrastructure Development) addresses providing electrical power to nonmilitary organizations.

No.	Scale	Measure
01	Yes/No	Mobile electric power met users' needs.
02	Yes/No	Unit constructed electrical system and installed power generation and regulation devices per operation order specifications and within the time stated in the directive.
03	Yes/No	Mobile electric power systems adhered to local and national electric code specifications.
04	Yes/No	Unit had environmental considerations planning and procedures in place and followed planning and procedures.
05	Time	To refine mobile electric power service program for the area of operations (AO) after receipt of warning order.
06	Time	To prepare engineer construction estimate that determines the effort needed to meet the requirements, assign operational and construction responsibilities, and determine additional personnel and equipment requirements.
07	Time	To reconnoiter to evaluate the site for suitability and conditions, identify construction problems and possible courses of action, and update or revise the engineer estimate.
08	Time	To prepare construction directive for a facility to house mobile electric power generators, power grid substations or transformers, and electric power lines and issue it to the construction unit. This directive states the exact assignment, project location, and start and completion times; specifies additional personnel, equipment, and materials available; prioritizes the entire project; and specifies type and frequency of construction reports, time needed for special procurement, and coordination instructions with user agency.
09	Time	To coordinate for and receive engineer assets to perform task.
10	Time	To monitor construction and perform quality assurance inspections.
11	Time	To perform location survey to establish permanent benchmarks for vertical control and well-marked points for horizontal control.
12	Time	To perform construction layout survey.
13	Time	To verify accuracy of construction plans and specifications to include ensuring the bill of materials includes all required materials to complete construction.
14	Time	To rough in the structure to accommodate electrical service.
15	Time	To install cable and conduit.
16	Time	To complete installation by connecting joints; grounding system at service entrance; connecting bonding circuit; attaching wire to switch terminal, ceiling and wall outlets, fixtures, and devices; and connecting service entrance cable and fusing or circuit breaker panels.
17	Time	To test and repair the system.
18	Percent	Of difference between planned mobile electric power requirements and actual requirements in the AO.

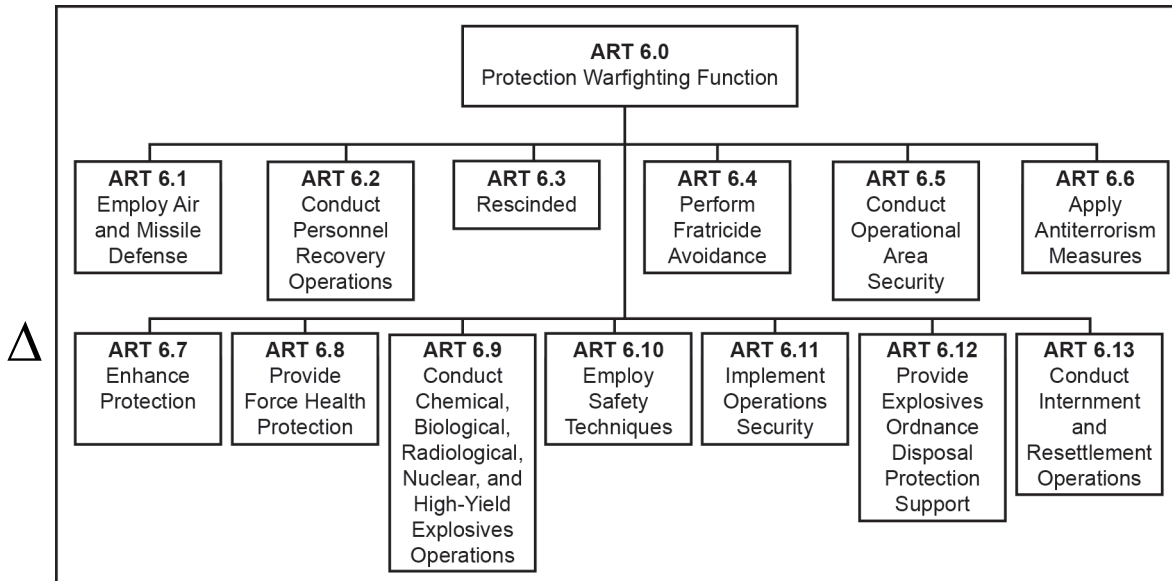
ART 4.0: The Sustainment Warfighting Function

No.	Scale	Measure
19	Percent	Of planned mobile electric power generation and distribution capability gained in the AO.
20	Percent	Of units in the AO that require mobile generation power.
21	Percent	Of electrical power in the AO generated by mobile generation units and distributed through a tactical grid.
22	Percent	Of electrical power in the AO provided by existing power generation facilities and distributed through a commercial grid.
23	Percent	Of power generation systems operational.
24	Percent	Of required kilowatt hours provided by mobile generation units.
25	Percent	Of power provided in the AO that meets voltage, frequency, and amperage standards.
26	Number	And types of mobile generation systems required meeting user requirements.
27	Number	Of kilometers of electric power lines that form the tactical grid in the AO.
28	Number	Of substations and transformers required by the tactical grid.

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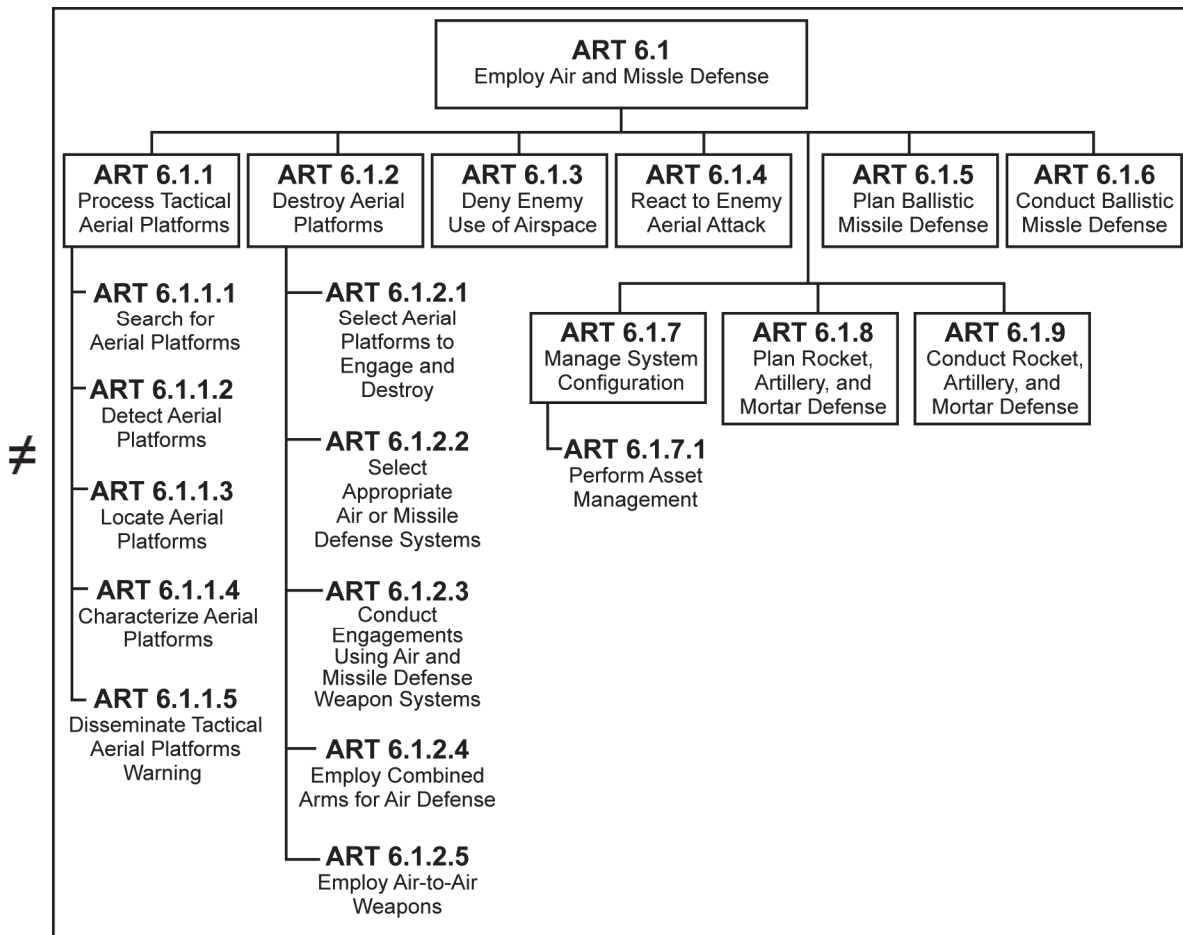
Chapter 6

#ART 6.0: The Protection Warfighting Function



The *protection warfighting function* is the related tasks and systems that preserve the force so the commander can apply maximum combat power. Preserving the force includes protecting personnel (combatants and noncombatants), physical assets, and information of the United States and multinational military and civilian partners. The protection warfighting function facilitates the commander's ability to maintain the force's integrity and combat power. Protection determines the degree to which potential threats can disrupt operations and counters or mitigates those threats. Emphasis on protection increases during preparation and continues throughout execution. Protection is a continuing activity; it integrates all protection capabilities to safeguard bases, secure routes, and protect forces. (ADP 3-0) (USACAC)

SECTION I – ART 6.1: EMPLOY AIR AND MISSILE DEFENSE



6-1. The air defense system protects the force from missile attack, air attack, and aerial surveillance by any of the following: interceptor missiles, ballistic missiles, cruise missiles, conventional fixed- and rotary-wing aircraft, and unmanned aircraft systems. It prevents enemies from interdicting friendly forces, while freeing commanders to synchronize movement and firepower. All members of the combined arms team perform air defense tasks; however, ground-based air defense artillery units execute most Army air defense operations. ART 6.1 includes fires at aerial platforms by both dedicated air defense systems and nondedicated weapon systems. (FM 5-42) (USASMD)

ART 6.1.1 PROCESS TACTICAL AERIAL PLATFORMS

6-2. Provide advanced warning for all aerial platforms, select targets, and match the appropriate response to tactical aerial platforms including tactical ballistic missile, taking into account operational requirements and capabilities of systems and units. (FM 3-01) (USAADASCH)

No.	Scale	Measure
01	Yes/No	Unit detected, located, and identified all tactical aerial platforms in area of operations (AO).
02	Yes/No	Unit developed and refined early warning plan.
03	Yes/No	Unit employed all available means to detect tactical aerial platforms.
04	Yes/No	Unit received advanced warning of aerial platforms.

No.	Scale	Measure
10	Percent	Of unit force protection activities integrated with those of other Services and nations.
11	Percent	Of reduced enemy targeting effectiveness due to the implementation of force protection measures.
12	Percent	Of reduced the effectiveness of enemy action due to friendly measures to harden units and facilities from enemy attack.
13	Percent	Of enhanced personnel, equipment, and facility survivability because of measures taken to harden them from enemy attack.
14	Number	Of friendly and noncombatant casualties due to terrorist attack.
15	Cost	Of measures to protect the unit or installation from terrorist attack.

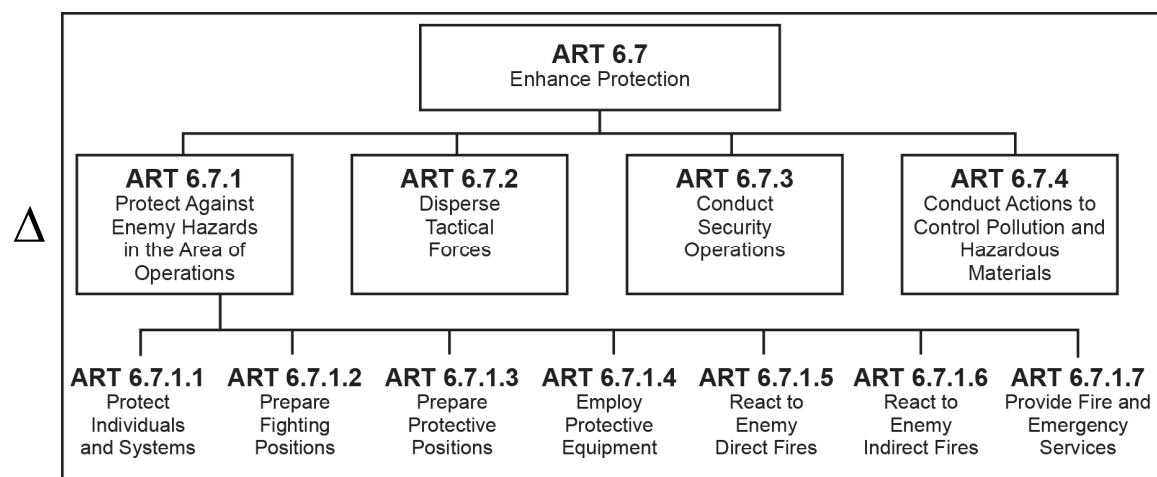
ART 6.6.3 REACT TO A TERRORIST INCIDENT

6-72. Implement measures to treat casualties, minimize property damage, restore operations, and expedite the criminal investigation and collection of lessons learned from a terrorist incident. (ATTP 3-39.10) (USAMPS)

Note: ART 5.5.1.2.3 (Conduct Criminal Investigations) addresses the conduct of crime analysis. ART 5.3.5.2 (Collect Relevant Information) addresses the collection of lessons learned.

No.	Scale	Measure
01	Yes/No	Response to terrorist incident did not prevent unit or installation from accomplishing the missions.
02	Time	To conduct reconnaissance or criminal investigation of site where terrorist incident occurred.
03	Time	To establish or restore security around site where terrorist incident occurred.
04	Time	To conduct area damage control activities, such as firefighting, power restoration and production, rubble clearance, removal of downed trees, and repair of critical damaged facilities and installations.
05	Time	To report the occurrence of terrorist incident to appropriate headquarters and agencies.
06	Time	For response forces or teams to arrive at site of terrorist incident.
07	Time	To search for, collect, identify, and treat injured survivors of terrorist incident.
08	Time	To search for, collect, identify, and process the remains of individuals killed in terrorist incident.
09	Time	To restore damaged facilities to desired level of functionality.
10	Percent	Of decreased attacked facilities capabilities to perform designed function.
11	Percent	Of response forces or teams arriving at terrorist incident site within desired response times.
12	Number	Of friendly force and noncombatant casualties due to terrorist incident.
13	Cost	To provide forces and supplies to provide local security and humanitarian aid and comfort, conduct area damage control, and restore damaged facility in response to a given terrorist incident.

SECTION VII – ART 6.7: ENHANCE PROTECTION



6-73. ART 6.7 is a concept that includes all aspects of protecting personnel, weapons, and supplies while simultaneously deceiving the enemy. Survivability tactics include building a good defense; employing frequent movement; using concealment, deception, and camouflage; and constructing fighting and protective positions for both individuals and equipment. Included are those assessments and surveys completed as a part of focused engineer reconnaissance support that includes infrastructure reconnaissance. (See FM 3-34.170.) Survivability operations are the development and construction of protective positions, such as earth berms, dug-in positions, overhead protection, and countersurveillance means, to reduce the effectiveness of enemy weapon systems. (FM 5-103) (USAES)

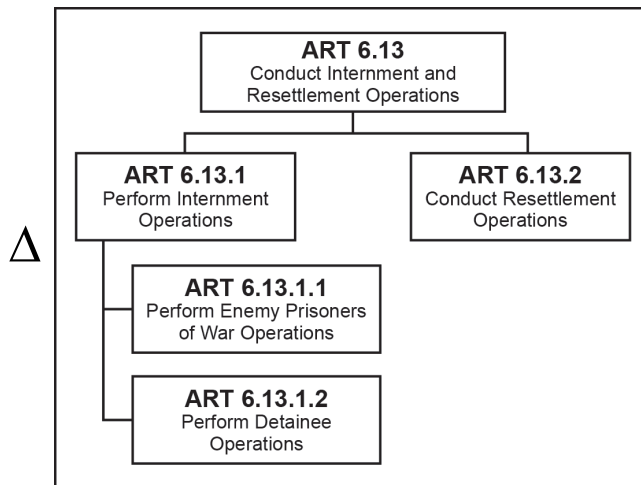
Note: This task branch is supported by ART 2.2.3 (Provide Intelligence Support to Protection).

No.	Scale	Measure
01	Yes/No	Unit could continue to conduct operations.
02	Yes/No	Unit losses from hazards were at acceptable levels.
03	Yes/No	Unit could determine when contaminated area was at a level with acceptable risk.
04	Yes/No	Unit performed risk assessment of all areas in the area of operations (AO) that underwent chemical, biological, radiological, and nuclear (CBRN) weapons attack.
05	Time	Required to conduct an area reconnaissance.
06	Time	To determine that unit has been attacked by CBRN weapons.
07	Time	To predict downwind hazard from the use of CBRN weapons.
08	Time	To disseminate hazard information to all units in the AO and appropriate headquarters and agencies outside the AO.
09	Time	To harden unit equipment, facilities, and positions.
10	Time	To acquire equipment and supplies necessary to harden a unit or installation.
11	Percent	Of U.S. military and civilian casualties.
12	Percent	Of increased time it takes the unit to conduct its operations due to the need to protect against identified hazards.
13	Percent	Of unit that has completed risk management and safety training.
14	Percent	Of friendly casualties due to failure to report the existence of hazards.
15	Percent	Of on-hand, mission-capable equipment necessary to protect the unit against hazards.
16	Percent	Of on-hand supplies necessary to protect the unit against hazards.

#ART 6.0: The Protection Warfighting Function

No	Scale	Measure
01	Yes/No	Explosive ordnance disposal (EOD) support met the aim of the requesting authorities.
02	Yes/No	Collateral damage incurred during the conduct of the EOD operation was in acceptable limits.
03	Yes/No	Unit safeguarded classified materials and publications during the EOD operation.
04	Yes/No	Unit forwarded items and components of technical intelligence value to appropriate headquarters or agency.
05	Time	To move from the current location to the work site.
06	Time	To identify safety requirements and considerations concerned with the ordnance found during environment restoration projects.
07	Time	To gather intelligence information (what, when, where, how delivered, and type) regarding munitions and improvised explosive devices.
08	Time	To identify safety requirements and considerations.
09	Time	To identify personnel, equipment, procedures, and additional support requirements.
10	Time	To coordinate with reporting and other agencies for additional site support assistance such as engineer, medical, security, and transportation.
11	Time	To clear munitions and improvised explosive devices (IEDs).
12	Time	To document render-safe procedures, as completed, for unknown ordnance if technical intelligence data does not exist.
13	Time	To train personnel providing executive protection services on recognizing and practicing immediate action drills when confronted by conventional or IEDs.
14	Percent	Of safety precautions enforce during EOD operations.
15	Percent	Of reported munitions and IEDs rendered safe.
16	Percent	Of reported munitions and IEDs rendered safe per the requesting agencies priorities.
17	Percent	Of available EOD support expended on training executive protection services personnel.
18	Percent	Of available EOD support expended on assisting the U.S. Secret Service and other government agencies that provide executive protection services.
19	Number	Of casualties during the conduct of the EOD operation.
20	Number	And types of ordnance located and destroyed by EOD personnel.
21	Number	Of requests for assistance from civil authorities responded to within a given period.

△ SECTION XIII – ART 6.13: CONDUCT INTERNMENT AND RESETTLEMENT OPERATIONS



4-157. Internment and resettlement operations include the two major categories of internment operations and resettlement operations. These categories focus on specific types of detainees and U.S. military prisoners. They also discriminate between civilian internees included as part of internment and those dislocated civilians that may be retained as part of resettlement operations. Internment operations focus on all types of detainees and U.S. military prisoners. Although a part of internment operations, confinement refers to U.S. military prisoners rather than internment (U.S. military prisoners are covered under ART 5.8.2 [Intern U.S. Military Prisoners]). Resettlement operations focus on dislocated civilians, those civilians not part of the population of detainees. Military police conduct internment and resettlement operations to shelter, sustain, guard, protect, and account for populations (enemy prisoners of war, civilian internees, dislocated civilians, or U.S. military prisoners) as a result of military or civil conflict, of natural or man-made disaster, or to facilitate criminal prosecution. Internment involves detaining a population or group that poses some level of threat to military operations. Resettlement involves quartering members of a population or group for their protection. These operations inherently control the movement and activities of their specific population for imperative reasons of security, safety, or intelligence gathering. (FM 3-39.40) (USAMPS)

Note: ART 4.5.5.3 (Provide Engineer Support to Bases and Installations) addresses the construction, management, and maintenance of bases and installations to include facilities such as those required for the internment of detainees.

△ ART 6.13.1 PERFORM INTERNMENT OPERATIONS

4-158. This ART covers how units perform activities when they are responsible for interning detainees, to include combatants, retained persons, and civilian internees. It ensures the safety and humane treatment of the incarcerated individuals, the maintenance of law and order within the facilities, as well as the safety of the guards and the surrounding civilian and military facilities and installations. All captured or detained personnel, regardless of status, shall be treated humanely and in accordance with the Detainee Treatment Act of 2005 and DODD 2310.1E, and no person in the custody or under the control of the Department of Defense, regardless of nationality or physical location, shall be subject to torture or cruel, inhumane, or degrading treatment or punishment, in accordance with and as defined in U.S. law. (FM 3-39.40) (USAMPS)

#ART 6.0: The Protection Warfighting Function

No.	Scale	Measure
01	Yes/No	Internment activities did not prevent or seriously interfere with accomplishment of the unit's primary tactical mission.
02	Yes/No	U.S. forces performing internment activities observed international laws of war, U.S. laws and regulations, rules of engagement, and status-of-forces agreements.
03	Yes/No	U.S. forces performing internment activities observed local customs, mores, and taboos where possible.
04	Yes/No	Detainees received adequate amounts of appropriate food, water, clothing, housing, and medical care.
05	Yes/No	U.S. forces established and maintained order in detention facilities.
06	Yes/No	U.S. forces took environmental regulations, laws, and considerations into account during planning and were followed during procedures.
07	Time	To refine plans for the collection and internment of detainees.
08	Time	To move detainees to their respective internment facilities from point of capture and detainee collection point.
09	Time	To construct camps to house detainees.
10	Time	To develop and enforce internment control measures, such as lists of controlled supplies and contraband.
11	Time	To forward intelligence information collected to unit intelligence staff.
12	Time	From interrogation to internment of civilian internees.
13	Time	To assign International Serial Number.
14	Percent	Of interned detainees requiring medical treatment provided in the AO.
15	Percent	Of interned detainees requiring medical treatment requiring evacuation out of the AO.
16	Percent	Of friendly force personnel in the AO involved in maintaining internment facilities.
17	Percent	Of detained civilians released after interrogation.
18	Percent	Of unit sustainment requirements provided by detainees.
19	Percent	Of unit sustainment capabilities needed to support internment operations.
20	Number	Of civilian internees who can be resettled within a given time.
21	Number	Of civilian internees.
22	Quantity	By type of supply needed to support internment operations.
23	Number	Of detainees interned.
24	Number	Of facilities to intern civilian internees established.
25	Number	Of internment facilities established.
26	Number	Of military working dogs needed for patrol or the detection of narcotics and explosives.
27	Ratio	Of guards to detainees or civilian internees.

Δ ART 6.13.1.1 PERFORM ENEMY PRISONERS OF WAR OPERATIONS

4-159. This ART covers how units provide safe and humane treatment for enemy prisoners of war (EPWs). This task includes the collection, screening, processing, transfer, internment, safeguarding, and release of EPWs. (FM 3-39.40) (USAMPS)

No.	Scale	Measure
01	Yes/No	Conduct of internment activities did not prevent or seriously interfere with accomplishment of the unit's primary tactical mission.
02	Yes/No	U.S. forces conducting internment activities observed international laws of war, U.S. laws and regulations, rules of engagement, and U.S.-host-nation agreements.
03	Yes/No	U.S. forces conducting internment activities observed local customs, mores, and taboos where possible.

#ART 6.0: The Protection Warfighting Function

No.	Scale	Measure
04	Yes/No	EPWs received necessary food, water, pay, clothing, housing, and medical care.
05	Yes/No	U.S. forces established and maintained order in EPW facilities.
06	Time	To construct facilities to intern EPWs.
07	Time	To develop and enforce internment control measures, such as lists of controlled supplies and contraband.
08	Time	To conduct repatriation operations at the end of hostilities.
09	Percent	Of EPWs requiring medical treatment in the area of operations (AO).
10	Percent	Of EPWs requiring medical treatment requiring evacuation out of the AO.
11	Percent	Of unit sustainment capabilities needed to support internment operations.
12	Number	Of EPWs.
13	Number	Of facilities established to intern EPWs.
14	Number	Of military working dogs needed for patrol or the detection of narcotics and explosives.
15	Number	Of dollars paid to EPWs for work performed.
16	Number	Of retained persons used to support EPW operations.
17	Ratio	Of guards to EPWs.

Δ ART 6.13.1.2 PERFORM DETAINEE OPERATIONS

4-160. This ART covers how units provide safe and humane treatment for civilian internees and combatant's not classified as enemy prisoners of war (EPWs) in accordance with the Geneva Conventions. This task includes the collection, screening, processing, transfer, internment, safeguarding, and release of EPWs. (FM 3-39.40) (USAMPS)

No.	Scale	Measure
01	Yes/No	Conduct of internment activities did not prevent or seriously interfere with accomplishment of the unit's primary tactical mission.
02	Yes/No	U.S. forces conducting internment activities observed international laws of war, U.S. laws and regulations, rules of engagement, and U.S.-host-nation agreements.
03	Yes/No	U.S. forces conducting internment activities observed local customs, mores, and taboos where possible.
04	Yes/No	Civilian internee's members of armed groups received necessary food, water, pay, clothing, housing, and medical care.
05	Yes/No	U.S. forces established and maintained order in EPW facilities.
06	Time	To construct facilities to intern detainees.
07	Time	To develop and enforce internment control measures, such as lists of controlled supplies and contraband.
08	Time	To conduct repatriation operations at the end of hostilities.
09	Percent	Of detainees requiring medical treatment in the area of operations (AO).
10	Percent	Of detainees requiring medical treatment requiring evacuation out of the AO.
11	Percent	Of unit sustainment capabilities needed to support internment operations.
12	Number	Of detainees.
13	Number	Of facilities established to intern detainees.
14	Number	Of military working dogs needed for patrol or the detection of narcotics and explosives.
15	Ratio	Of guards to detainees.

Δ ART 6.13.2 CONDUCT RESETTLEMENT OPERATIONS

4-161. This ART covers how units provide support for resettlement of dislocated civilians to include their safety and security. This task includes controlling the movement of civilians, providing relief to human suffering, protecting civilians from combat operations or other threats, and establishing resettlement facilities in support of civil affairs operations. Establishing a facility requires collection, screening, processing, evacuation, housing, safeguarding, and releasing displaced civilians. ART 6.13.2 occurs in temporary and long-term facilities and points. (FM 3-39.40) (USAMPS)

No.	Scale	Measure
01	Yes/No	Resettlement activities did not prevent or seriously interfere with accomplishment of the unit's primary tactical mission.
02	Yes/No	U.S. forces performing resettlement activities observed international laws of war, U.S. laws and regulations, rules of engagement, and status-of-forces agreements.
03	Yes/No	U.S. forces performing resettlement activities observed local customs, mores, and taboos where possible.
04	Yes/No	Dislocated civilians received necessary food, water, pay, clothing, housing, and medical care.
05	Yes/No	Unit supervised incarceration process and transfer to prison facilities for dislocated civilians guilty of criminal activity.
06	Yes/No	Unit had and followed environmental considerations planning and procedures .
07	Yes/No	Unit determined the reliability of local markets to meet needs.
08	Yes/No	Unit provided emergency food, water, sanitation, shelter, and medicine.
09	Yes/No	Unit coordinated with other donors and humanitarian agencies.
10	Yes/No	Unit established registration and health screening mechanisms.
11	Yes/No	Unit assessed prevalence for human immunodeficiency virus (known as HIV) and acquired immunodeficiency syndrome (known as AIDS).
12	Time	To refine plans for the movement, security and support of resettlement of dislocated civilians.
13	Time	To establish dislocated civilian collection points.
14	Time	To develop and enforce resettlement and population control measures, such as curfew, travel permits, and lists of controlled supplies and contraband.
15	Time	To forward intelligence information collected to unit intelligence staff.
16	Time	To move dislocated civilians to their respective resettlement facilities from their initial collection points.
17	Percent	Of dislocated civilians who received medical treatment.
18	Percent	Of friendly force personnel in area of operations involved in maintaining dislocated civilian resettlement facilities.
19	Percent	Of unit sustainment capabilities needed to support resettlement operations.
20	Number	And types of supplies needed to support resettlement operations.
21	Number	Of dislocated civilians.
22	Number	Of resettlement facilities and camps established.
23	Ratio	Of guards to dislocated civilians.

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