

# CONCLUSION—ARMY LONG-TERM TRANSFORMATION

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Army Transformation is an ongoing, continuous process rather than a distinct entity or end state. It fundamentally changes the way Army forces operate within a joint team and expands the range of military options for the President, SECDEF, and combatant commanders for global full-spectrum operations. Army Transformation ensures the Army continues to provide the JFCs with essential campaign-capable and network-centric land power capabilities. Infused with a joint and expeditionary mindset, Army forces contribute to joint operations by enabling the JFC to conduct prompt, simultaneous, and sustained operations to achieve decisive conflict resolution through the control of land, people, and resources.

While strategic and operational environments change and JOCs mature and evolve, the Army must maintain its ability to deliver ready and relevant land power capabilities to the Joint Force. The Army must maintain a level of robust investment in research and development. Further, the Army must invest in collaboration with the other Services, government agencies, industry, and academia to reduce future risk and maintain military superiority over adaptive adversaries. The following discussion provides some broad thoughts on Future Force capabilities beyond the horizon articulated in the TPG to focus future S&T efforts.

Soldiers are the centerpiece of the Army and Army formations. Expanding their battle command capabilities enhances interdependent, network-centric warfare. Investments in communication and computational power exploit information age technology to seamlessly network people and systems—horizontally and vertically—into the joint network. This joint network provides the tool to joint forces that enables

them to operate at unprecedented levels of synchronization.

Continuous connectivity to the GIG empowers Soldiers to conduct full-spectrum operations. In addition to near real time situational awareness in the tactical area of operations, Army personnel have access and provide information to HSOCS, knowledge centers, and other information-enabling portions of the joint team—redefining the term reachback. This access to knowledge facilitates rapid and seamless transitions of missions and tasks without loss of momentum. Automated and integrated operations of manned and unmanned systems improve effective employment of those assets and increase survivability and lethality of the force. Instantaneous translation capabilities promote multinational operations and stabilization of indigenous populations to exploit intelligence and enhance speed of conflict resolution.

Automation advances also change the way Soldiers and units train and how they are fielded with new equipment. Faster computers, higher bandwidth networks, and shared databases enable simulations to create fully integrated, LVC environments at all levels. These capabilities also facilitate life-long distance learning and professional development as well as rapid assimilation of lessons learned from the operating environment into individual and unit training.

## Army Core Competencies

- Train and equip Soldiers and grow leaders
- Provide relevant and ready land power capability to the combatant commander and the joint team

Advanced capabilities in Soldier uniforms and equipment similarly increase the readiness of the Joint Force. Human engineered equipment imbed Soldier experiences in the development process and reduce unit set fielding and new equipment training times. Nanotechnology improvements enable personnel to operate in all-weather and hazardous environments with lighter individual equipment. Nanotechnology advances also provide the capability to monitor physiological health throughout the force and to automatically initiate treatment or performance enhancements.

Nanotechnology is expected future manufacturing technology that will make most products lighter, stronger, cleaner, less expensive and more precise.

Investments in biomedical research provide biomedical solutions to protect the health of Soldiers and sustain their physical and cognitive performance. Biomedical research products, such as human-physiology-based models and equipment design criteria, training strategies, and nutrient and drug interventions, enable effective personal protection equipment, provide methods to monitor cognitive status, and sustain cognitive performance. Biomedical research strategies help Soldiers rapidly acclimate and optimally perform in extreme environments, facilitate the design and testing of survivable weapon systems, and promote the development of optimal rations to sustain Soldier performance under extreme conditions. Biomedical research advances promote force protection through innovative medical countermeasures to protect Soldiers from both endemic global diseases and from chemical and biological weapons. These countermeasures include multicomponent and multi-agent vaccines, chemical prophylaxes, improved vector control strategies, post-exposure treatments, and environmental monitoring devices.

Power and munitions advancements improve the capability to conduct prompt and sustained decisive operations. Multitasking munitions enhance lethality while reducing the quantity of platforms and the total munitions load. Fuel cell technology provides energy for sustained operations of platforms and weapons while simultaneously producing water. Micro-fuel cells replace batteries in many applications and provide long-term power to Soldier systems. These technologies increase the responsiveness of the Joint Force by decreasing the support tail of the deployed force through the reduction of logistics footprint and demand in theater.

Revolutionary changes in both Army and joint inter- and intra-theater lift assets dramatically increase strategic responsiveness and operational agility. New and improved airlift and sealift platforms enhance expeditionary capabilities and precision force application across the battlespace. New and advanced rotary wing aircraft similarly facilitate joint fires, maneuver, and battle command. These systems enable the Joint Force to exploit vertical envelopment, ship-to-shore, and OTH capabilities.

Exploitation of unmanned platforms becomes the normal mode of operation within the Joint Force. Reduction in weight and size of sensor and communications packages on UAVs increase capabilities for autonomous, multimission operations as well as manned and unmanned teaming. Ground station improvements reduce the size and power requirements necessary to interface with the UAVs. Unmanned ground systems enable joint forces to operate in complex terrain while enhancing lethality and force protection. In addition to reconnaissance, unmanned systems impact all aspects of the battlefield to include battle command, force application, protection, and logistics. Expanded use of unmanned systems fundamentally alters the manner in which the Joint Force will see first,

understand first, act first, and finish decisively. In complementary ways, advances in information technology and the development of interactive and learning analytical tools and processes significantly improve the ability of operational forces to fuse the exponential growth in data.

## **SUMMARY**

The ATR is the Army Transformation Strategy to manage the actions and activities across the DOTMLPF domains to build new capabilities for the Current Force. It also develops the essential capabilities to make the Future Force relevant, responsive, and dominant to emerging threats. The Nation's first Commander-in-Chief,

George Washington, crafted the original charter for the Army in 1775 when he stated, "Let us have a respectable Army, and one such as will be competent to every contingency." The goal of Army Transformation is the development of the Future Force—a strategically responsive, precision maneuver force, dominant across the range of military operations. Development of the Future Force allows the Army to accelerate proven DOTMLPF capabilities to enhance the effectiveness of the Current Force. Implementation of the Army Transformation Strategy provides the relevant, ready, and dominant land power capability to combatant commanders and the joint team now and in the future.