The DEFENSE (Interstate) Highway System – ESSENTIAL to Our Nation's SECURITY

By Kenneth Wykle

Fifty years ago, one of the most critical logistical infrastructure assets for the deployment of the United States Armed Forces was created. Now called the Dwight D. Eisenhower National System of Interstate and Defense Highways, it has served as the foundation on which defense mobility, domestic commerce, and travel have come to depend. From the original objective of "getting the farmers out of the mud" to playing an integral part in today's corporate and military "just-in-time delivery" philosophies, the Interstate system has significantly advanced the nation's economic and defense movement capabilities.

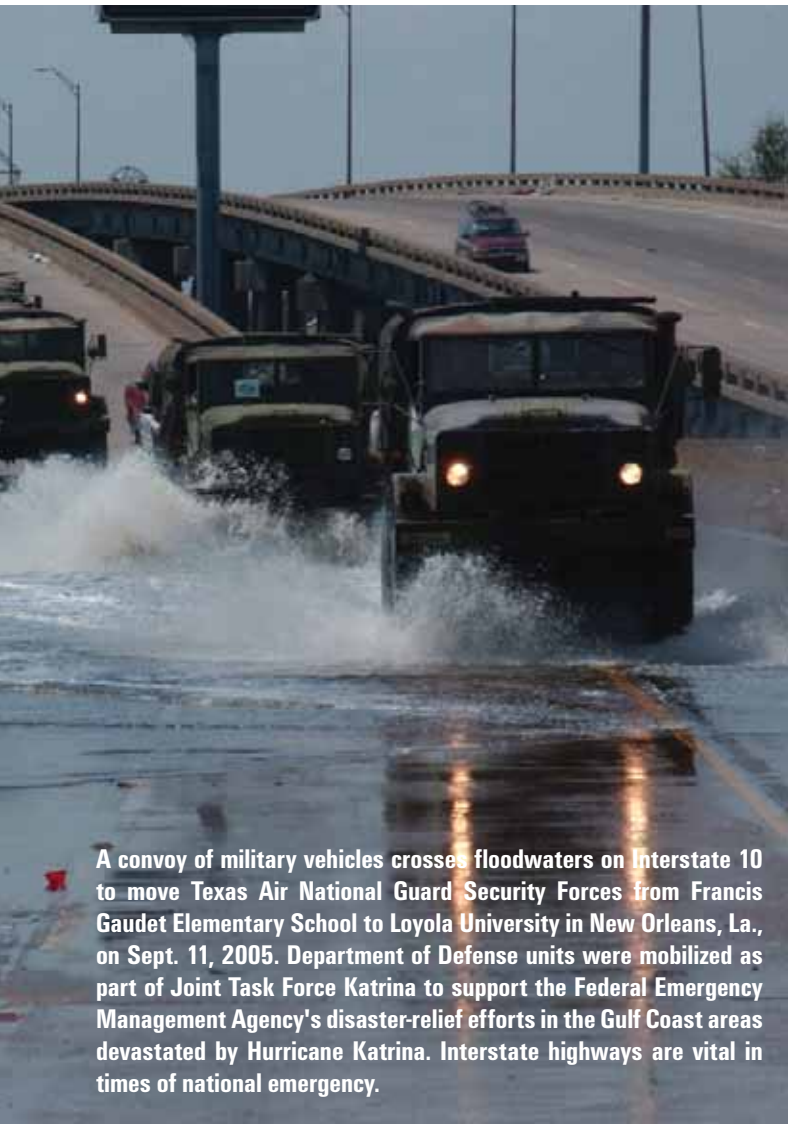
The military had a significant impact in the creation of the Interstate system. It began in 1919 when Dwight D. Eisenhower, as a young Army officer, convoyed from Washington, D.C., to San Francisco, Calif., over the course of two months. Later in World War II, he observed firsthand the benefits of the German autobahn system. Together, these experiences solidified his logistical philosophy. He envisioned an interconnected, high-speed, limited-access highway system in the United States. Years later, as president of the United States, he implemented his vision through the creation of the Interstate system, which was authorized by law in the 1956 Federal-Aid Highway Act.

The military also had significant influence on the final configuration (map) of the Interstate system. In 1922, the Army developed the first map of roads important to national defense. Referred to as the Gen. John (Blackjack) "Pershing" map, it helped in the identification of Interstate routes. Later, through cooperation with the Federal Highway Administration (then called the Bureau of Public Roads) and the American Association of State Highway Officials (AASHO), the Department of Defense (DoD) participated in the development of comprehensive Interstate design standards. These

standards were needed to meet military requirements for the load-bearing strength of bridges, clearances for overpasses/bridges, and lane widths.

The DoD's mission is to provide the military forces needed to protect our country, to deter war, and, should deterrence fail, fight and win our nation's wars in order to ensure our freedoms. A critical enabler for this mission is a strong defense transportation capability. Public highways – and primarily the Interstate system – are key components of the overall defense transportation system (DTS). It provides the capability for the military to quickly move significant numbers of troops and equipment from forts and bases to airports and seaports of embarkation. This capability enables the United States to project military power around the world in support of our national interest.

The importance of the Interstate system to the DoD became evident in the 1970s, during the rail consolidations, bankruptcies, and associated rail mileage reductions. During that time, the DoD was assured through the robustness and redundancy of the highway system, and remaining rail network, that military troops and materiel could continue to be transported expeditiously. Today, the Interstate system remains a critical link in supporting current and future mobility and logistical requirements of the military. It continues to effectively support defense highway movement needs in both peace and war. Military units with mobilization sites located within 400 miles of their airports or seaports of embarkation generally convoy by Interstate highway to these locations.



A convoy of military vehicles crosses floodwaters on Interstate 10 to move Texas Air National Guard Security Forces from Francis Gaudet Elementary School to Loyola University in New Orleans, La., on Sept. 11, 2005. Department of Defense units were mobilized as part of Joint Task Force Katrina to support the Federal Emergency Management Agency's disaster-relief efforts in the Gulf Coast areas devastated by Hurricane Katrina. Interstate highways are vital in times of national emergency.

DoD photo by Senior Master Sgt. Mike Arellano, U.S. Air Force

Gen. Eisenhower observed first-hand the limitations of the U.S. highway system as he convoyed across the country in 1919. Because of his experiences and subsequent implementation of his vision, today's military convoys can move quickly and efficiently throughout the United States. This was demonstrated during Operations Desert Shield/Desert Storm (DS/DS), Enduring Freedom, and Iraqi Freedom. The Interstate system and other connecting U.S. highways supported military logistics by providing high-speed, limited-access means to quickly mobilize and deploy soldiers and their equipment to ports of embarkation. By the end of DS/DS, more than a half million troops, 3.1 million tons of unit equipment and dry cargo, and 6.1 million tons of petroleum products had been moved to the theater of operations. Furthermore, the redeployment of units and equipment involved the return of more than 450 shiploads of cargo. All of this returned materiel was distributed to forts and bases throughout the United States. The Interstate system and connecting highways were critical in efficiently moving these personnel and equipment to the designated locations. In addition, the Interstate and other major highways played an equally important role in supporting training requirements for Reserve and National Guard forces by allowing expeditious movement of military convoys to training sites.

The Interstate design standard requiring 16-foot vertical clearances under bridges has proven its value. This design standard was originally based on military need. It has allowed the DoD to utilize the Interstate for moving its oversized equipment. The DoD continues to emphasize the importance of maintaining this 16-foot clearance and replacing sub-standard structures in order to support current and future military equipment. In addition to the military benefit, maintaining this clearance is necessary for interstate commerce because manufacturers are finding it more cost-effective to build larger pieces of equipment at the plant for ultimate shipment via the highways to consumers.

While the Interstate system is the primary focus for DoD public highway needs, there are other public highways that support the defense requirement. The entire defense public highway network is referred to as the Strategic Highway Network (STRAHNET). STRAHNET includes the Interstate system (46,730 miles), about 15,000 miles of additional major non-Interstate highways, and about 2,000 miles of connectors providing access to some 200 important military installations and ports. STRAHNET and STRAHNET Connectors were incorporated into the National Highway System (NHS) through

continued on page 208

continued from page 51

the Intermodal Surface Transportation Efficiency Act of 1991 and the National Highway Designation Act of 1995. In addition to the actual creation of the Interstate, the inclusion of STRAHNET in the NHS was a key milestone for the DoD because it marked the first time that defense-important public highway requirements were identified in national surface transportation policy.

The investment we have made in the Interstate system and STRAHNET is critical to the security and defense of our country; therefore, we must ensure they are maintained to standard, expanded where necessary, and perform efficiently into the future. To ensure the capability to move military personnel and equipment to the ports expeditiously, the nation must sustain a robust and responsive defense transportation system. The Interstate system is a component of the DTS and must continue to provide the capability necessary to ensure our national security and economic growth.

As we look to the future, the DoD will continue to pursue ways to shorten the time to deploy our armed forces to critical trouble spots worldwide. One of the primary means to achieve this goal is to transform future combat and support systems into lighter, more mobile forces while still maintaining the same or greater lethality level. Reducing equipment size and weight will allow more equipment to be loaded on each ship, thereby increasing the quantity of materiel and expediting the delivery of equipment into the combat theater. The next surface transportation reauthorization legislation will be critical to the future defense movement capability and the economic viability of the country. As we approach this important milestone, policymakers must consider the future role of the military as it relates to natural disasters, homeland defense, and national security, and the need for the highway system to support these efforts. Defense needs must be included in the next reauthorization legislation.

But what will the next reauthorization legislation include, and in what direction will our legislators go? There are several issues and technologies that must be investigated and pursued to enhance defense mobility/deployability as well as interstate commerce. A significant issue to the military is the capability (condition and capacity) of the "first mile" and the "last mile," i.e. how do we ensure that critical roads (connectors) providing access from the forts and bases to the Interstate system and from the Interstate to the seaports and airports meet military needs and contribute to the rapid movement of forces? Also, in light of the declining revenues coming into the national Highway Trust Fund, where will we find new funding sources for future infrastructure maintenance and construction needs? New funding alternatives should be thoroughly evaluated, and their impact on military movements, such as increased tolling, must be addressed. We need to ensure that a comprehensive Interstate and NHS follow-on program builds on the successes of the Interstate system, and that current and future technologies are integrated into the national highway system for the 21st century. This must include access issues, intelligent transportation systems, congestion mitigation, and capacity needs, to list just a few. As with current policy, the size and weight of military equipment as well as the origins and destinations must be considered. Another area that is critical is maintaining capacity in construction areas and in developing construction techniques that significantly reduce the time that construction/maintenance crews are on the job site. Advances in these areas will directly lead to increased mobility, reduced congestion, and greater safety on our highways. Implementing such measures in the future could be the most important objective of the post-Interstate federal highway program.

This anniversary of the Interstate system may serve as the springboard or stepping stone for developing a comprehensive national surface transportation policy that will translate into landmark reauthorization legislation required in FY 2010! The nation's surface transportation program will continue to affect the military's force projection capability and the economy. Therefore, the objective of these reauthorization initiatives must be to maintain a national highway system that will ensure our continued economic and military position in the world. As with the creation of the Interstate system, it is imperative to national defense that military requirements be included in future surface transportation policy decisions and reauthorization legislation.

Gen. Eisenhower would be pleased and impressed by the incredible contribution the Interstate system has made to the U.S. economy and the mobility of our military forces. The Interstate connects the "dots" (forts, bases, manufacturing plants, distribution centers, airports, seaports, rail yards, refineries, economic centers, and more), enabling our robust economy and providing the foundation for mobility throughout the United States. It is vital to the mission of America's warfighters and the defense of our nation. It is not a coincidence that developing countries are placing significant emphasis on enhancing, improving, and expanding their transportation infrastructure. They recognize the importance of a viable transportation network to a growing and expanding economy. It is imperative that we maintain our transportation infrastructure to established standards and continue to enhance our world-class highway transportation capability.

Congratulations to the nation and its highway professionals on the 50th anniversary of the Dwight D. Eisenhower National System of Interstate and Defense Highways. Be proud of your achievements!

Kenneth (Ken) Wykle, president of the National Defense Transportation Association, is the former administrator, Federal Highway Administration, U.S. Department of Transportation and a retired Army lieutenant general. His last duty assignment was as deputy commander, U.S. Transportation Command. He has worked in the private sector as vice president, Defense Transportation, SAIC, and as senior vice president, Public Sector, Savi Technology.

Robert D. Franz, Highways Systems Program Director, Office of the Special Assistant for Transportation Engineering, Surface Deployment & Distribution Command, Transportation Engineering Agency, contributed to this article.