Rail Assured Movement

The gap in force deployment strategic mobility

by LtCol James R. Stover

Rail transport is essential to military deployments from home station to a port of embarkation (POE) through the strategic rail corridor network (STRACNET). Rail movement potentially expedites the transit between military installations and POEs. In order to minimize the transportation risks associated with the requirement to rapidly move combat materiel to staging areas or POEs for onward deployment to overseas destinations, contractual agreements with Class I Railroads that prioritize military movements during times of crisis, contingency, or war must be established.

Unit Type	89' bi-level	89' flatcar	60' flatcar	Non-DOD railcars	68' DODX car
Heavy Brigade Combat Team (BCT)	2	227	6	235	59
Stryker BCT	4	130	25	159	0
Infantry BCT	3	106	5	114	17
Sustainment Brigade	9	303	31	343	17
Maneuver Enhancement Brigade	5	166	132	303	8
Totals	23	932	199	1,154	101

Table 1. U.S. Army Brigade Rail Movement Planning Estimates.

Military Deployment Strategy

The Federal Highway Administration maintains a guide, last released on 1 February 2017, which coordinates military deployments on roads and highways. Chapter One of this guide is dedicated to current military deployment concepts and states:

> The Department of Defense (DOD) has established an objective of being able to deploy to a theater within 10 days with sufficient combat power to defeat an enemy during the next 30 days and be ready for the next fight within another thirty days. Key to meeting these deployment goals is the capability of units to move rapidly from their installations to land, sea, and aerial POEs or to designated locations within the United States.[1]

A no-notice deployment requiring forces to deploy and arrive in a theater within thirty days of notification will create an instant movement requirement for rail providers that, potentially, already have their resources committed to contractual business agreements. The responsibility for the deployment of forces using rail is coordinated through the Surface Deployment Distribution Command (SDDC), which is a transportation component command of U.S. Transportation Command (TRANSCOM).

The Army is the military Service branch responsible for railroad operations within the DOD. A 1964 directive charged the Army with funding the purchase of enough general-purpose railcars (cars capable of being used by more than one Service) to meet the rail movement demands of all the Services.[2] The SDDC manages and coordinates domestic routing services for rail and highway movements in the continental United States.

Together, the Army and SDDC maintain a limited rail capability with DOD owned (DODX) railcars. When requested, rail carriers will integrate DODX cars into unit (single customer) or manifest (multiple customers) trains. The DODX cars range in capacity from 75 tons to 140 tons and are usually reserved for the transport of heavy vehicles such as M1A1 Tanks and M88 Tank Retrievers. The DODX fleet size totaled 1,897 railcars as of January 2019.[3] SDDC Operations stated that

> in a surge environment, several thousand railcars are required within the first thirty days with a mass rail build-up of train movements into and out of strategic gulf and west coast seaports, ammunition depots, and numerous military installations.[4]

Given the number of DODX railcars alone, the DOD will require rail support from the railroad industry during a rapid force mobilization.

On any given day, commercial rail cars are devoted toward fulfilling con-

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tractual obligations per a railroad's business plan and portfolio. Minimizing car dwell is one method the railroad industry uses to help maximize business profit. To this end, there are current railroading initiatives seeking to improve revenue and operating ratios through optimized asset utilization, which translates to fewer cars available for short notice military movements.

Industry Asset Utilization

Since the late 1990s, Precision Scheduled Railroad concepts were incorporated or are being implemented within six of seven Class 1 Railroad Companies. Currently, Union Pacific is implementing Precision Scheduled Railroad principles while changing the company's transportation network with the overall goal of becoming more efficient.[5] Bill Stephens, contributing author to *Trains*, stated, "Union Pacific removed more than 1,200 locomotives and approximately 30,000 freight cars since August 1, 2018."[6] Meanwhile, Kansas City Southern reduced its locomotive fleet by 45.[7] A reduction of active rail resources and an increased number of trains being utilized daily increases the risk that Class 1 railroads (undergoing asset utilization initiatives) will not be able to provide surge train capacity to the DOD for a no-notice mobilization requirement. In March 2018, Jeff Berman of Logistics Management stated,

> Class I railroads' aggressive effort to reduce their operating ratios to impress Wall Street investors and shareholders has resulted in the systemic shedding of resources by Class I carriers, including locomotives and crews, that has degraded service to unacceptable levels, and resulted in virtually nonexistent surge capacity to meet rail customers' needs.[8]

Per Part III of the Defense Travel Regulation, "rail cars requested less than twenty-one business days before the desired loading may not be received in time."[9] Based upon asset utilization initiatives across the industry, there is an increased risk in the Railroad Industry's ability to support a simultaneous multi-Service brigade equivalent movement within the first 30 days of a validated movement requirement.

Assured Transportation Access

TRANSCOM is a functional combatant command responsible for providing global air, land, and sea mobility solutions to national security requirements. To execute this vast array of mobility responsibilities, TRANSCOM relies heavily on commercial transportation providers through contractual agreements. The Congressional Research Service states,

> the Commander of TRANSCOM, with the approval of the Secretary of Defense, has the authority to develop and maintain contractual relationships between the DOD and the commercial transportation industry to cultivate concepts, requirements, and procedures to provide responsive strategic mobility capabilities.[10]

With this authority, TRANSCOM has the capability to supplement military transportation assets with civil augmentation as needed to meet strategic mobility demands.

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There are currently three readiness programs that provide assured transportation access to airlift and sealift requirements. The Civil Reserve Air Fleet is an agreement with U.S. civilian airlines for national and international personnel and cargo movements. The Voluntary Intermodal Sealift Agreement (VISA) and Voluntary Tanker Agreement (VTA) are two sealift agreements with commercial maritime carriers. Together, the VISA and VTA provide the DOD assured sealift access for force movements, sustainment, and POLs when military sealift asset capacity is exceeded.

SDDC maintains a five-year study to update and designate the STRACNET to determine, which rail lines and military installations are most important to national defense. The STRACNET study was initiated in response to DOD concerns of the railroad industry's ability to support a defense emergency in the 1970s. Since then, STRACNET identifies rail lines that are most critical to national defense with the most recent results published in October 2018. SDDC states,

> STRACNET allows defense and civil rail planning to be more easily coordinated and allows for prioritization of restoration of rail service in the event of any emergency that cause large-scale loss of rail lines, which minimizes the risk of a civil rail line abandonment affecting national defense.[11]

The guide ensures that rail line access to support critical military movements is known and identified to the U.S. Government, Federal Railroad Administration (FRA), and the rail industry.

The STRACNET and Defense Connector Lines study was coordinated with the FRA to determine critical lines and rail access to military installations. Together, 33,000 miles of STRACNET rail lines and 4,700 miles of connector rail lines were identified across the United States. Figure 1 depicts the STRACNET identified in the 2018 study, and Appendix A of the study provides by state maps with each STRACNET and rail connector lines for 126 designated military installations and activities. Although the DOD continuously ensures rail line access across the United States and to designated military installations and activities, there is no formal agreement for rail capacity to support rapid mobilization rail movements.

Rail Assured Movement Gap

The DOD has agreements and procedures in place to ensure that civil airlift, civil sealift, and the civil rail network can support national defense mobilization movements. However, there is no formal agreement to ensure civilian rail companies will provide rail cars and locomotive (power) resources for an immediate (24–72 hours) mobilization event.

In 2018, military deployments, exercise rotations, and routine logistics movements were supported via rail service. The Union Pacific alone provided

approximately 16,800 rail cars and containers for military movements in the western half of the United States. SDDC coordinated over 41,000 rail carloads and over 650 trains in 2018, but these movements were coordinated with enough time to ensure the rail industry could plan for and allocate rail cars and locomotives to meet required delivery dates. With the notification of a crisis and immediate simultaneous mobilization of military forces, rail movement will be needed. Rail resources dedicated to contractual agreements will need days to complete their contractual cycle time and reposition to a military installation or activity for loading. The DOD's ability to rapidly deploy large conventional size forces is based upon the rail industry's ability to provide resources and the military installation's rail loading throughput. With a planning assumption that ten days are needed to complete contractual deliveries, twelve days could easily be used as a planning factor to reposition rail assets to a military installation. When linked with loading and movement to a POE, three weeks could quickly be estimated.

Rail support is based on known and forecasted requirements. Since there is no Civil Reserve Air Fleet, VISA, or VTA rail equivalent agreement, there is an enormous amount of risk the DOD has accepted during an unforeseen mobilization phase of an operation.

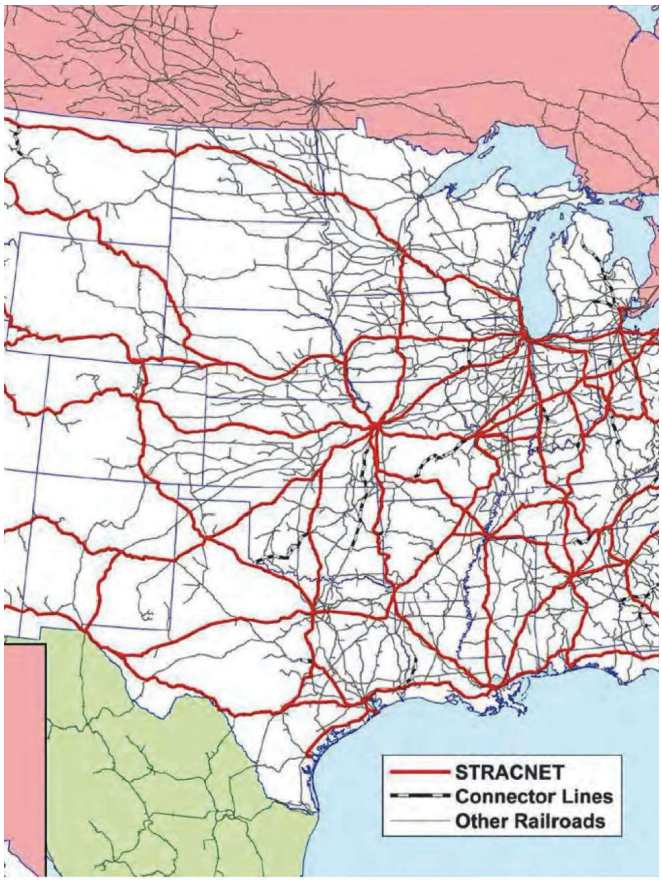

Figure 1: Civil Rail Lines Most Important to National Defense.
(Figure provided by author.)

Conclusion

Through airlift and sealift agreements, the United States maintains the ability to project forces via air and sea. While suitable APOEs are numerous and easily accessed from major bases, surface transportation to designated SPOEs is critical to closing forces in accordance with contingency and operational plan timelines. Regular assessments by the FRA and SDDC monitor rail network status and capacity to support national defense requirements. These assessments are for naught, however, without contractual agreements for rail carriers to provide rail cars and prioritize military movements in time of crisis, contingency, or war. Given the nation's commitment to ensure that our military is prepared to respond to any contingency in the defense of our national interests abroad, it behooves the DOD to ensure national objectives are not hindered by an inability to close forces promptly and reliably.

Notes

1. Federal Highway Administration, *Introduction to Current Military Deployment Concepts*, (Washington, DC: February 2017).

2. Military Surface Deployment and Distribution Command, Command Affairs, "Military Surface Deployment and Distribution Command (SDDC) Overview," *U.S. Army,* (September 2008), available at https://www.army.mil.

3. Personal email correspondence between author and Angie Hemphill on 13 March 2019.

4. Personal email correspondence between author and Lonnie Ortez on 31 January 2019.

5. Class I railroads are regulated by the STB and subject to the Uniform System of Accounts (49 CFR 1201). These carriers are also required to file annual and periodic financial and statistical reports. Railroads are classified based on their annual operating revenues. A class 1 carrier has an annual operating expense of $447,621,226 or more.

6. Bill Stephens, "Union Pacific Announces Another Round of Layoffs, Closure of Pine Bluff Shop," *Trains*, (February 2019), available at http://trn.trains.com.

7. Bill Stephens, "Kansas City Southern Says Shift to PSR Will Help Improve Service, Reduce Costs," *Trains,* (January 2019), available at http://trn.trains.com.

8. Jeff Berman, "STB Communicates Concern over Service Issues to Class I Railroads," *Logistics Management*, (March 2018), available at https://www.logisticsmgmt.com.

9. U.S. Transportation Command, *Defense Transportation Regulation—Part III*, (Scott Air Force Base, IL: June 2016).

10. Lynn M. Williams and Velma C. Gay, "Defense Primer: U.S. Transportation Command, (TRANSCOM)," (Washington, DC: Congressional Research Service, March 2018).

11. Military Surface Deployment and Distribution Command, Transportation Engineering Agency, *Strategic Rail Corridor Network (STRACNET) and Defense Connector Lines Study*, (Scott Air Force Base, IL: Military Surface Deployment and Distribution Command, 2018).