

MILITARY RAIL

newsletter

WHY USE MILITARY RAIL?

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During World War II, as General Patton's Third Army dashed across Europe, the U.S. military railroaders helped to keep his army moving. Fuel trucks that tried to support Patton's tanks encountered longer and longer distances resulting in mounting strain to both personnel and equipment. Accidents and vehicle deterioration were an increasing logistical challenge as allied forces drove deeper and deeper into Europe. Railroading was seen as the feasible alternative because of its durability, fuel efficiency, and extreme carrying capacity using very few personnel. Railroading in combat zones was a feat repeated in our country's wars to include the Civil War, WWI, WWII, and Korea. The U.S. military has never lost a war when using railroading in a combat zone with U.S. military personnel operating behind the controls. So why did we stop using railroads to win our wars?

The answer it seems lies in three areas: Retirement, knowledge loss, and feasibility. When the Vietnam War commenced by the mid 1960's, most military railroad veterans of WWII and Korea had retired. Since computers didn't exist yet, much of their operational knowledge also disappeared from the military railroad units. In Vietnam a majority of the U.S. supply lines ran east-west while one main Vietnamese rail line ran north-south near the coast. Although the United States military had the capability with its own operational rail battalions to build new rail lines in Vietnam that ran east-west, the American leadership decided not to employ military rail. Instead, thousands of troops and vehicles were used to move millions of tons of supplies great distances throughout Vietnam by road, a task only a few dozen military railroaders moved only a decade before during the Korean War. This practice of trucking instead of railroading has repeated itself up to our present day.

The sheer power that rail can bring to a battle can be summed up in one word... numbers. For example, one 100-car train with a four man crew can move in a matter of hours the equivalent of what can take nearly 1,000 vehicles, 2,000 troops, and thousands of gallons of gasoline a week or more to move.

Is it any surprise that other militaries like Russia and China use their railroads to support their military efforts in our present day? China for example claims that it has the fastest military rail in the world with the ability to move over 1,500 of its light infantry troops at speeds in excess of 180 miles per hour to points across Asia in only a few hours. Russian President Vladimir Putin's own family has a history of railroading and Russia's military has used its military rail operating battalions to help settle conflicts for decades to include most recently in places like Chechnya, Georgia, and Crimea.



If roads are the veins of a country then the railroads are the main arteries. Four-Star General James A. Van Fleet, the commanding general of the U.S. Eighth Army during the Korean War (1951-53) sums up the capabilities of rail in his book "Rail Transport and The Winning of Wars" writing that 600 box cars could do the equivalent of what takes 6,000 vehicles. Further elaborating on the General's math, this would mean that 24 military railroaders in six trains could replace 12,000 troops in 6,000 vehicles. When U.S. military commanders just a few years ago had to wrestle with troop level limits in Iraq and Afghanistan, one can only imagine how rail could've been a huge force multiplier in distribution networks and vehicle/personnel reallocation for combatant commander's needs.

This bi-annual newsletter is dedicated to all 5 Branches of the U.S. military and for those who wish to learn how railroading can make a positive difference in their military endeavors and in the world itself. The goal is to share rail knowledge with you to give you an alternate transportation option for your future planning considerations.

Railroading can be used as a force for good in supporting military as well as humanitarian efforts around the globe. So if you're intrigued so far, I invite you to climb aboard and read on....

KNOW YOUR FLATCAR

By Andrew Koenig Jr.

If you wish to move your military equipment by rail in the future, knowing what type of flat car to use for your mission is a key to a successful rail movement. This article will help you understand:

1. What type of railroad flat car you need to use depending on what you want to ship.
2. What types of flat cars are available for you to choose from.
3. Help you understand how much weight you can place on flat cars you wish to use.

Flatcar lengths fall into two main categories: 60 to 68 feet and 89 feet. The shorter cars are typically about 10 to 10 ½ feet wide and the longer cars are 9 to 9 ½ feet wide. Most of the commercial flatcars are normally 70-ton capacity cars while the Department of Defense are 100-Ton cars for the DODX 41000- and 42000- Series and 140-Ton cars for the DODX 40000-series. The weight each flatcar can actually carry (And which you must make sure you do not exceed.) is stencilled on the side of the car as the Load Limit (LD LMT).

Military rail movements involve both military and civilian owned flat cars. Military owned flat cars are initialled “DODX” (Department of Defense) while civilian owned flat cars come in various initials. When you submit a request for a rail movement the below chart will give you an understanding of each type of flat car’s capabilities.

For Flat Cars where you need Chain tie down capability the following list will help you

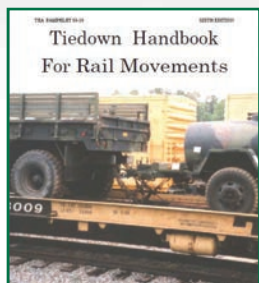
OTTX	(60 FT length, 154K lbs. load limit, 3/8” chain, wood deck)
HTTX	(60 FT length, 154K lbs. load limit, 1/2” chain, wood deck)
ITTX	(89 FT length, 154K lbs. load limit, 3/8” chain, wood or steel deck)
TTDX	(89 FT length, 154K lbs. load limit, 1/2” chain, steel deck)
DODX 40000s	(68 FT length, 299K lbs. load limit, 1/2” chain, steel deck)
DODX 41000s	(68 FT length, 183-213K lbs. load limit, 1/2” chain, steel deck)
DODX 42000s	(89 FT length, 170-201K lbs. load limit, 1/2” chain, steel deck)

For Flat Cars where you need Container capability (Note: Chains are not used to secure containers)

ATTX, TTCX, VTTX	(60 FT length, 156K lbs. load limit, three 20 foot containers)
DODX 48000s	(89 FT length, 156K lbs. load limit, four 20 foot containers)

[Note: DODX 40000s, 41000s, 42000s can also carry containers]

While all DODX flatcars have container pockets capable of handling Conex, Milvan and Causeway sections it is important to note that not all civilian flatcars are equipped with container pockets. For example while the ATTX and VTTX 60 foot flats are COFC (Container On Flat Car) capable, they don’t have any deck or chain-tie down capability for vehicular rolling stock. The remainder of this article provides you a visual representation of what each flat car listed above looks like and additional capabilities.



TEA PAM 55-19



Example of an 89' flat car with four 20' containers on it

Vehicle/Equipment Flatcar Capabilities

The OTTX series 60 foot wood deck flatcar with side and end stake pockets are equipped with special tie-down channels along the sides of the car and adjacent to the center sill on each side. There are movable and retractable ratchet winches equipped with chain tie-down assemblies with 3/8” alloy chain having a proof test rating of 18,000 lbs. Total length of chain 8'-1 1/4'.



Complement of tie-down winches varies in accordance with shipping pool. Rail tie down loading crews must be aware for correct blocking and bracing procedures when loading a wood deck flatcar. (Reference TEA PAM 55-19.)

The HTTX series 60 foot wood deck flatcar has side and end stake pockets with 38 heavy duty tie-down anchors and chain assemblies contained in channels along the sides of the car and adjacent to the center sill on each side. The movable and retractable tie-down anchors are equipped with chain assemblies having a load binder, heavy duty compression unit, adjustable grab hook and 1/2” alloy chain with a proof test rating of 27,500 lbs. The total length of the chain is 12'-0". The tie-down winches vary in accordance with shipping pool requirements. Rail Tie down loading crews must be aware of correct blocking and bracing procedures when loading a wood deck flatcar, reference TEA PAM 55-19.



The ITTX series 89 foot steel deck flatcars are equipped with special foldaway pedestals (may or may not have pedestals) and 32 movable and retractable ratchet type winches with 3/8” alloy chains.



TTDX series 89 foot steel deck flatcars are standard level cars equipped with sixteen (16) movable screw type winches with 1/2” x 9’ long alloy chains. This car has no COFC capabilities and can be loaded with multiple vehicles.



The “Tie down Handbook for Rail Movements” (TEA PAM 55-19) is a primary reference your personnel can use in order to know how to tie down equipment to flatcars.



The **DODX 40000-series**, 68 foot steel deck, 1/2-inch chain equipped flatcar has a maximum loading capacity of 140-tons, green in color with a LD LMT between 300300lbs – 301000lbs. Since these flatcars were constructed by multiple manufacturers it's important to pay attention to the LD LMT stenciled on the side of each car. These were designed to haul two M1 Abrams Tanks. They are the only railcar in the SDDC fleet to be capable of holding two Abrams they are in high demand and typically reserved for military railheads with tracked equipment. This series of railcar is also used for the



Kalmar Container Handler, 40-ton Cranes and a variety of RTCH's since they are shipped as a "high and wide" (aka HIWD) cargo. The 40000-series is also equipped with container pockets to hold three 20 foot containers or causeway sections.



The **DODX 41000-series**, 68 foot steel deck, 1/2-inch chain equipped flatcar with a maximum loading capacity of 100-tons are red in color with a LD LMT ranging between 200000lbs - 201000lbs. This series of flatcar is capable of hauling one M1 Abrams or two M2 Bradley Infantry Fighting Vehicle. There are normally 32 to 36 chain assemblies on the car and container pockets capable of holding three 20 foot containers or causeway sections.



The **DODX 42000-series**, 89 foot steel deck, 1/2-inch chain equipped flatcar has a loading capacity of 75-tons. Yellow in color, their LD LMT may range 140000lbs – 160000lbs.

Since these flatcars were built by two different manufacturers it is important to pay attention to the load limit stenciled on the side or each car as they may vary. There are normally 32 to 36 chain assemblies on the car and container pockets capable of holding four 20 foot containers or causeway sections. It is important to note the center of the car is typically marked with a red stripe.

For Container Flatcar Capabilities



The **ATTX**, **VTTX**, and **TTCX-series**, have no decking or chains to secure cargo and is only equipped with container pockets. Typically used at ammo depots and for unit movements involving shipping containers, this car is very limited in its capabilities and usually has a capacity of 75-tons. This series is 60' long and will hold three ISO shipping containers.

The **DODX 48000-series**, 89 foot steel deck flatcar isn't chain equipped and is a COFC only. There are four container pockets throughout the car to accommodate four 20 foot or two 40 foot containers and or causeway sections. Units should be aware of this car's limited capabilities when ordering railcars for a load out or deployment. The maximum capacity on this series of flatcar is typically 70-Tons.



88H - CARGO SPECIALISTS

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Soldiers with a military occupational specialty of 88H (Cargo Specialist) are best known for being capable of operating heavy lift support vehicles such as forklifts, cranes and container handlers. However, 88H's are involved in all modes of transportation whether it's by truck, air, vessel, or rail. No matter which type of transportation is chosen, the 88H interprets the load plan an 88N (Transportation Management Coordinator) or UMO (Unit Movement Officer) creates and stages the cargo in accordance with how it will be loaded onto the rail cars. Ultimately, the 88H decides how equipment will be loaded and secured onto the rail cars using the load plan as a guide.

Once an 88H has determined how cargo will be loaded onto railcars, they inspect the equipment to be loaded to ensure shipping labels are correct, external attachments are properly secured, rolling stock is at proper fuel levels, and shackles are intact (Shackles are tie-down points found on vehicles). After pre-load inspection is complete, the next step is to load and secure the equipment onto the rail cars according to the load plan. In rare cases vehicle breakdowns do occur during loading procedures. If this happens to you, a possible solution is to simply tow the vehicle across the railcars to its intended spot. If it's not already loaded onto the first railcar, you can remove it from your lineup and adjust your load plan accordingly.

Rail operations is a team effort. Units which own the rolling stock to be loaded onto rail cars are usually required to provide drivers, ground guides and safety observers. Experienced 88H's can provide this training to Soldiers and also assist in checking tie down procedures as needed to ensure compliance with Army Regulations. If a rail load-out mission is needed in the middle of the wilderness, portable ramps can used and 88H's are also trained to build ramps.

In my experience, I've had an 88H crew load over 400 rail cars in a single day. That's roughly 1,200 pieces of equipment with over 1,000 of those being wheeled or tracked vehicles. By shipping rail, units free up Brigade size elements of Soldiers, roughly 2,000 to 3,000 personnel from having to transport long-distance. If your unit gets deployed overseas, using rail as an alternate means of transportation can free up your vehicles and personnel to do other essential missions while bringing shipments to your area of responsibility at a fraction of the cost.



HOW TO REQUEST AND CONDUCT A RAIL MOVEMENT

Written by: William Armstrong

Imagine this, you're sitting at your desk one morning when the phone rings and you learn of a major exercise planned six months from now involving several vehicles and equipment that are needed from your unit. Knowing the most efficient means of transporting all of your unit's gear can save you time, resources, and money. First ask yourself, "What do I need to ship?" Practically anything can be shipped by rail. Ultimately it's the Surface Deployment Distribution Command (SDDC) that makes a rail movement happen for you. Next, identify where your Installation Transportation Office (ITO) is located for the base that you work on and take your shipping list there to get a cost estimate. If you're in a Guard or Reserve unit (or your base doesn't have an ITO) you can always go directly to the SDDC and request a cost estimate.

The SDDC can generate price quotes for you showing whether it's cheaper to move by air, sea, truck or train. Alternate rail node locations can also be presented to you on where you can load and/or unload your equipment from the rail. Remember, rail nodes are near practically every military base, Reserve center and Guard center in the United States, so if you don't know where a rail node location is near you, the ITO or SDDC can provide you the locations. After getting a cost estimate, if the price is right and moving by rail is the best method, the next step for you is to submit the actual rail movement request.

For major training exercises the SDDC wants at least 45 days minimum from the time you submit a rail movement request to the day you can actually load your equipment onto the flat cars for movement (i.e. point of embarkation). Many military units wait too late and by the time they get a cost estimate back showing they'll save \$250,000 dollars shipping by rail vs. alternative means it's too late because they're already within the 45 day window of needing to have their equipment loaded onto the flat cars. As a helpful tip, start your rail planning process 70 days in advance. Usually a price quote can be generated for you in about a week, which will give you enough time to react and report your findings to higher headquarters where a decision can be made on the mode of transportation to use.

Once your command has decided to ship by rail, your ITO representative will share with you on what the loading requirements are. Usually the requesting unit provides the 88H's and personnel who load and secure the equipment onto the flat cars. The designated commercial carrier will then inspect the loaded rail cars for safety compliance, approve and then ship. If your unit is shipping less than 40 rail cars, usually it's attached to other commercial shipments moving across the country. But if you need 40 or more rail cars a railroad will usually create a "unit train" which is a train transporting a single commodity. Unit trains typically move faster across the U.S. because they don't have to be yarded, switched out and built into other trains moving farther across country towards a final destination.

Be careful if you are shipping only a handful of cars. Yes, you can still save money, time, etc. but once in a while "packages can be lost in the mail." You can prevent a shipment from being "lost" by calling into the daily military rail conference call, which is hosted by the SDDC to ensure the civilian railroads, who are also on the call, are tracking your military rail movement. Think of a needle in a haystack, the civilian railroads want to keep their customers happy and they have the ability to accurately locate exactly where your rail car is to ensure it arrives in a timely manner but sometimes because a shipment is so small, it can be overlooked. That is why you must get on the call if your shipment is small to ensure it's delivered on time. You can request a tracking number called an "MTX Number" which reports the progress of your shipment three times a day.

Once your shipment leaves the port of embarkation, simply track the progress through the daily conference calls until it reaches the final destination and then have your Soldiers unload the rail cars (*Note: Commercial Ocean Terminals are Loaded/Unloaded by civilian Longshoreman but Soldiers must oversee proper loading/unloading*). Remember, shipping by rail is usually the cheapest method with the more equipment you have to move and the farther distance your shipment needs to travel. Hopefully, at least once in your career, you'll try shipping by rail and gain this very valuable experience.

(For more information on moving by rail contact Mr. George Gounley at george.g.gounley.civ@mail.mil)

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