 **TANK RAMP**  
PORTABLE RAIL RAMP & MAT





## SCENARIOS:

- LAND-SLIDE, BROKEN TREE
- FALLEN TREES / DEBRIS
- ENEMY ACTION  
DAMAGED TRACKS
- WITHDRAWAL OF  
HOST NATION SUPPORT
- CRANES UNOPERATIONAL

RESPONSE?



## HEAVY ARMOR PORTABLE RAIL RAMP

U.S. PATENT PENDING



INCREASES THROUGHPUT AT PORTS/RAIL TERMINALS

ACCELERATES ON/OFF LOADING— NO NEED FOR CRANES,  
EXPENSE CONVOYS AND HOST NATION SUPPORT

ALLOWS FOR THE SWARMING OF ARMOR ANYWHERE

INCREASES OPTIONS AND BUILDS RESILIENCY  
INTO ARMORED DEPLOYMENT AND EMPLOYMENT





# 2 PART SYSTEM

## ASSEMBLE UNDER 2 HOURS

### PORTABLE RAIL RAMP

- Capable of supporting M1A2 v3 in rail movement (93.5 short tonne)
- Approximately 7m x 3.54m x 1.47m (L x W x H)
- Consists of modules connected to each other to form an assembly
- Functions both at a level crossing, yards, and at a remote rail track locations
- Stacks/nests in the disassembled state to allow for efficient shipping via ISO shipping containers / Military truck / Rail car
- Designed for assembly by standard available lifting equipment, e.g. 4K forklift, 10K Atlas, crane, or block and tackle
- Works on level or unprepared ground and must be able to accommodate any slope via self-levelling design that is automatic
- Includes integrated lashing points for sections to be tethered together
- Works on both standard and broad gauge rails



### RAIL PROTECTOR MAT

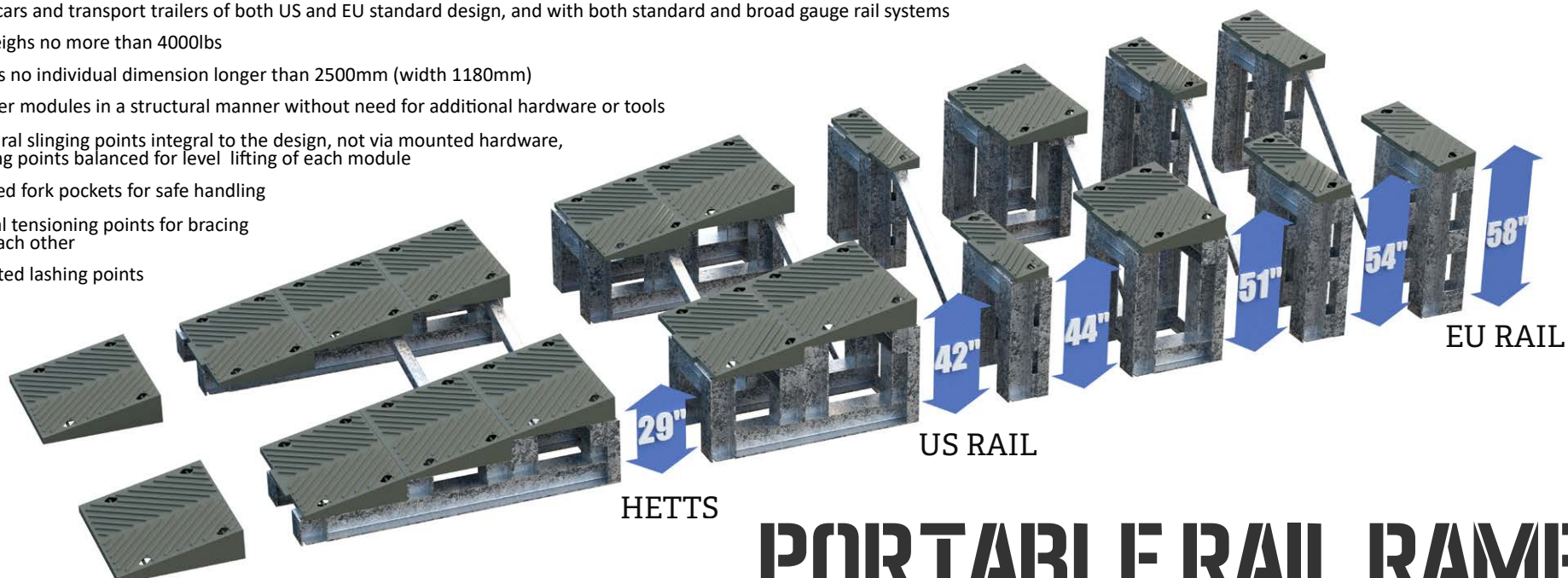
- Capable of supporting M1A2 v3 in rail movement (93.5 short tonne)
- Protects the train tracks against damage during loading or offloading via the ramp assembly
- Is made of multiple sections with no more than 2.3m in any one dimension
- Be modular in scope in 2m length increments, such that a mat of 2, 4, 6, 8, 10 or 12m+ long may be created from its sub-assemblies
- Fits into BICON or 20ft shipping containers
- Accommodates for both rail gauges, standard (1435mm) and broad (1520mm, "Russian")
- Assembles into position by a series of lifts via integral slinging points





# PORTABLE RAIL RAMP

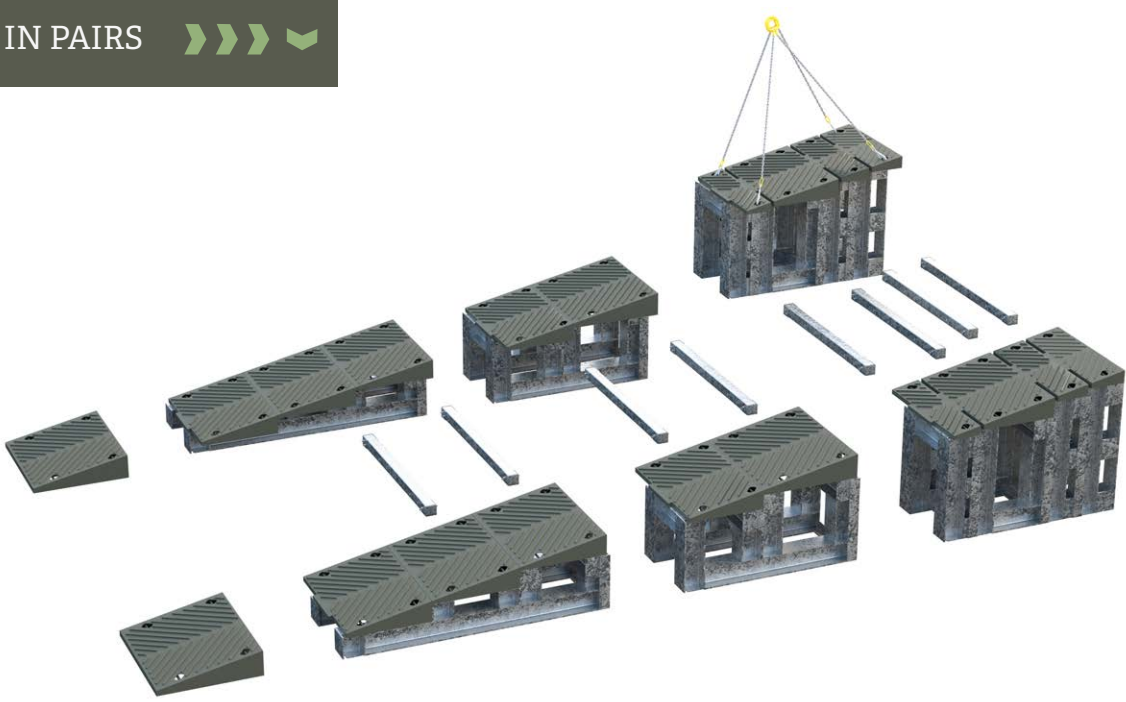
- Works with rail cars and transport trailers of both US and EU standard design, and with both standard and broad gauge rail systems
- Each module weighs no more than 4000lbs
- Each module has no individual dimension longer than 2500mm (width 1180mm)
- Connects to other modules in a structural manner without need for additional hardware or tools
- Contains structural slinging points integral to the design, not via mounted hardware, with such slinging points balanced for level lifting of each module
- Contains enclosed fork pockets for safe handling
- Contains internal tensioning points for bracing of modules to each other
- Includes integrated lashing points
- Non-slip surface



# PORTABLE RAIL RAMP

NO TOOL ASSEMBLY // SECTIONS LIFTED SEPARATELY OR IN PAIRS >>>>

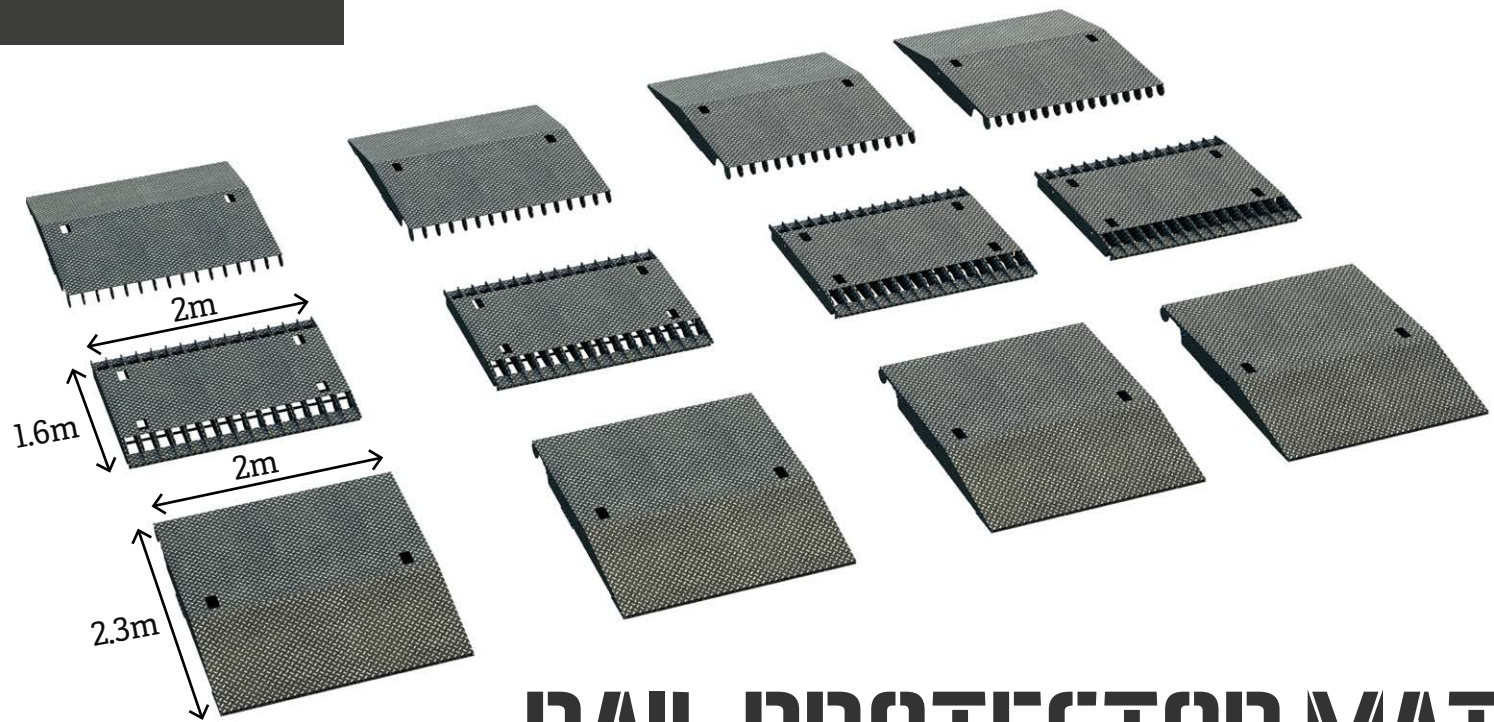
OPERATIONAL TEMPERATURE -20 C to +45





## RAIL PROTECTOR MAT

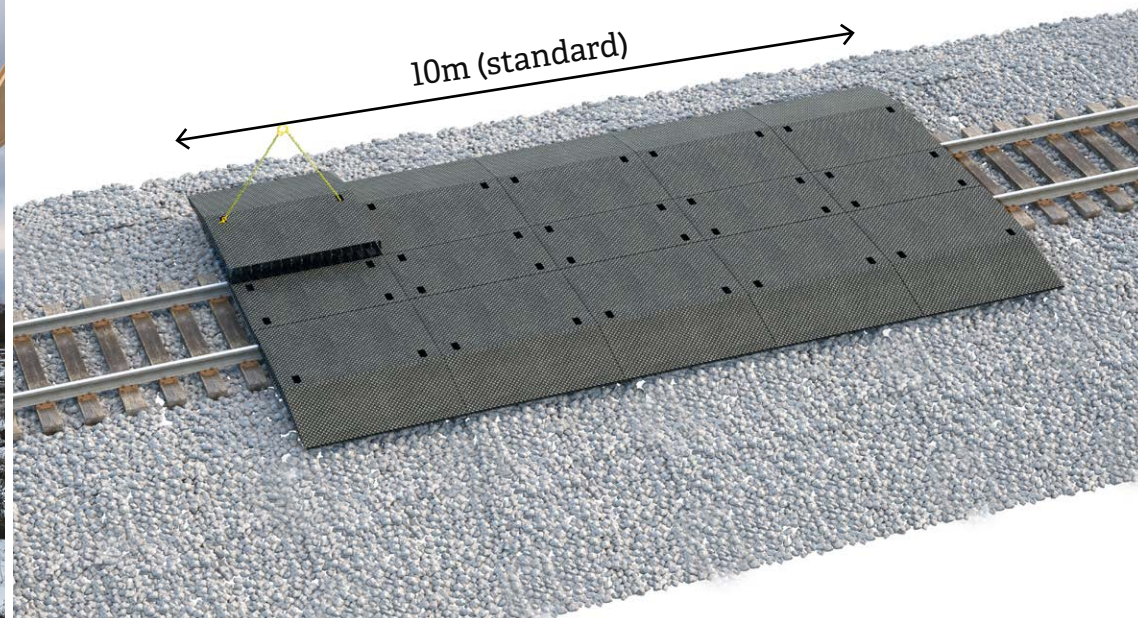
- Protects the train tracks against damage during loading or offloading via the ramp assembly
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## RAIL PROTECTOR MAT

NO TOOL ASSEMBLY >>>

OPERATIONAL TEMPERATURE -20 C to +45





# RAPID ACCESS



## RAMP

RAMP SYSTEM FITS INSIDE A SPECIALLY DESIGNED  
TRANSPORT CRATE AND 20FT CONTAINER



TRACK PROTECTOR MAT SITS IN  
CUSTOM PROTECTIVE CRATES OVER  
TWO STANDARD 20FT CONTAINERS  
(FOR 10M MAT)

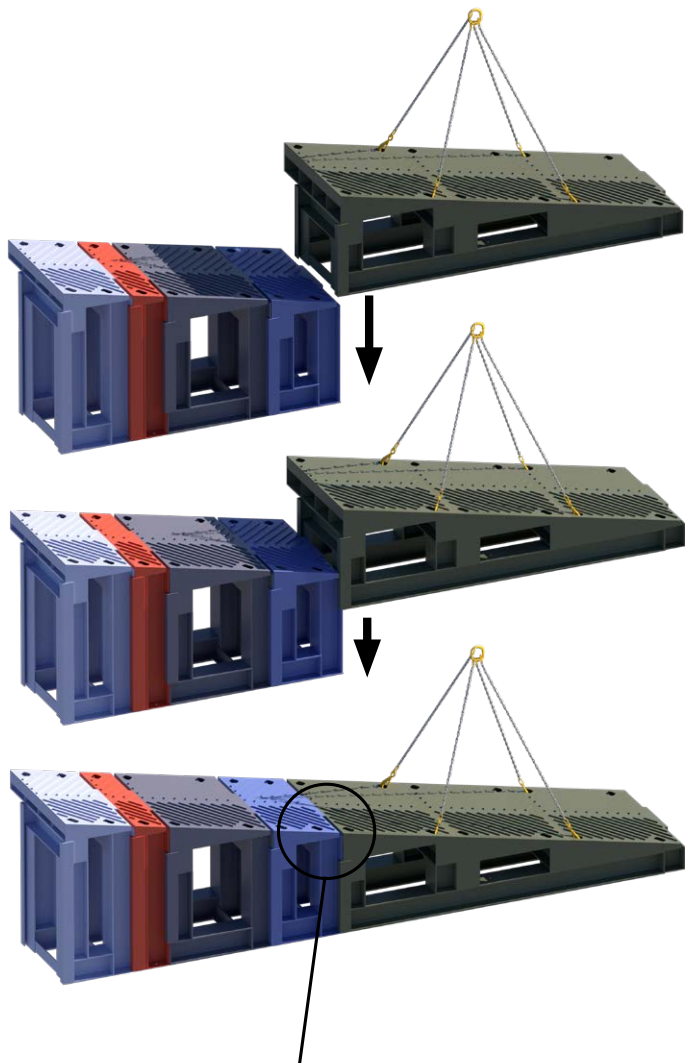
(containers for MAT optional or customer own\*)

## MAT



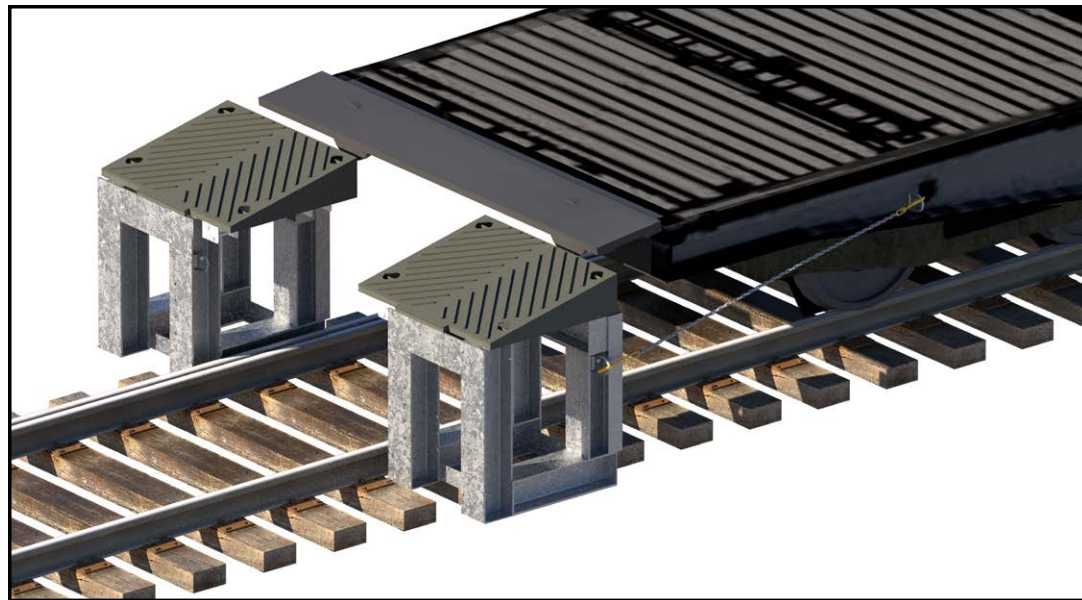
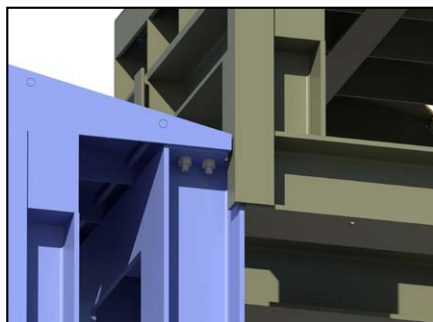


# EASY ASSEMBLY



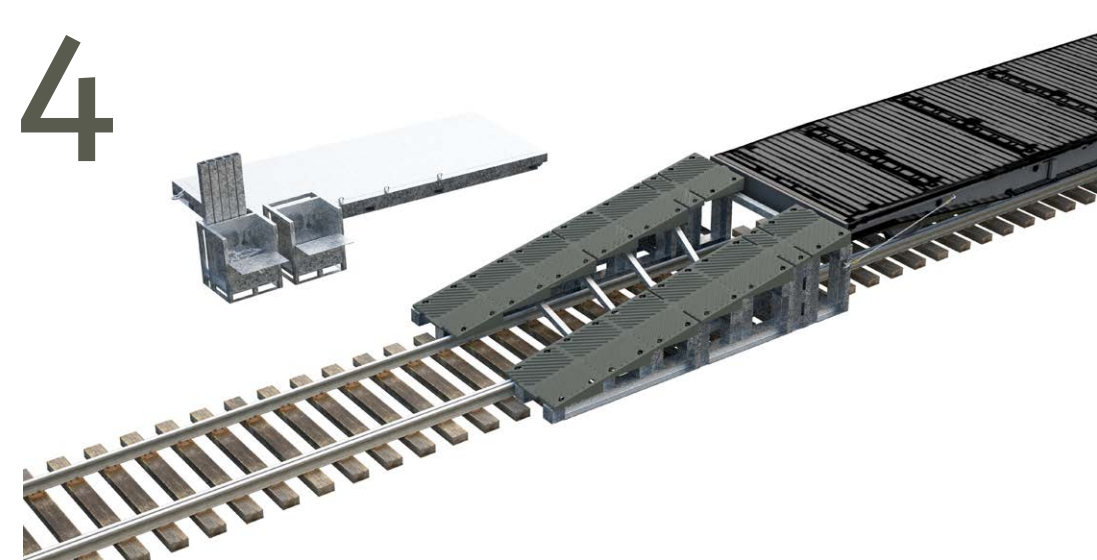
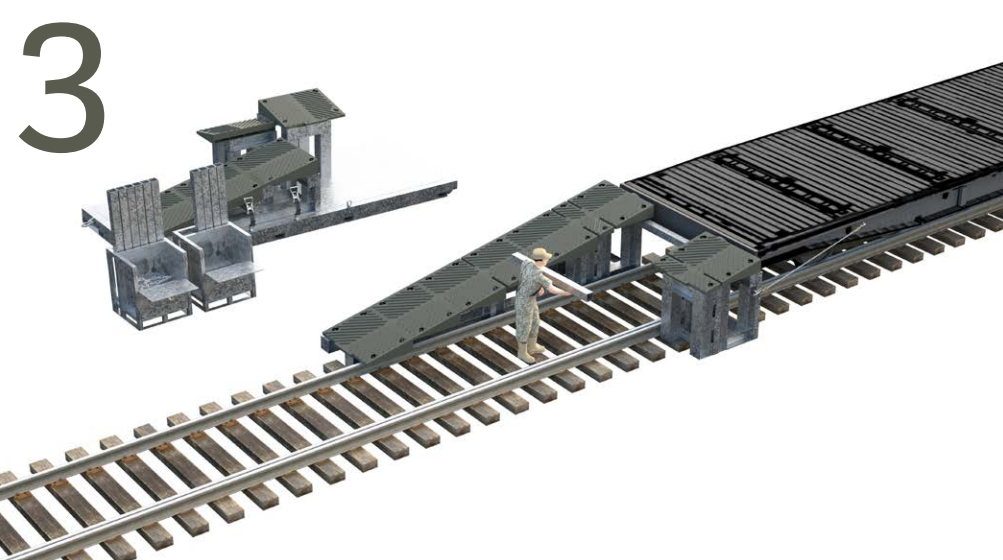
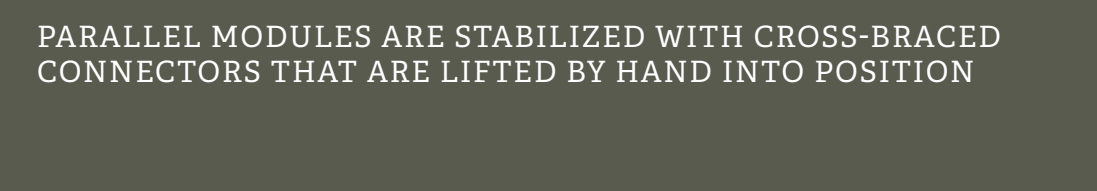
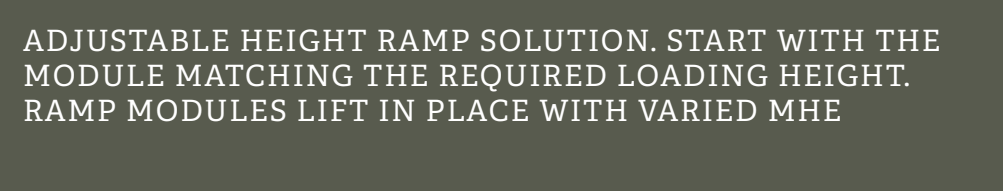
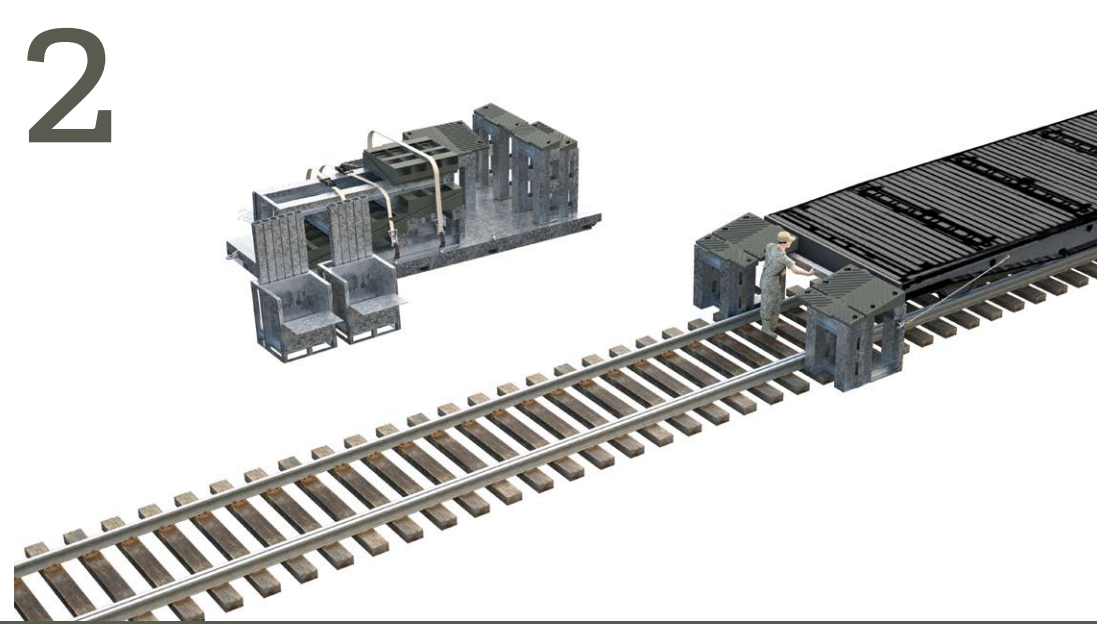
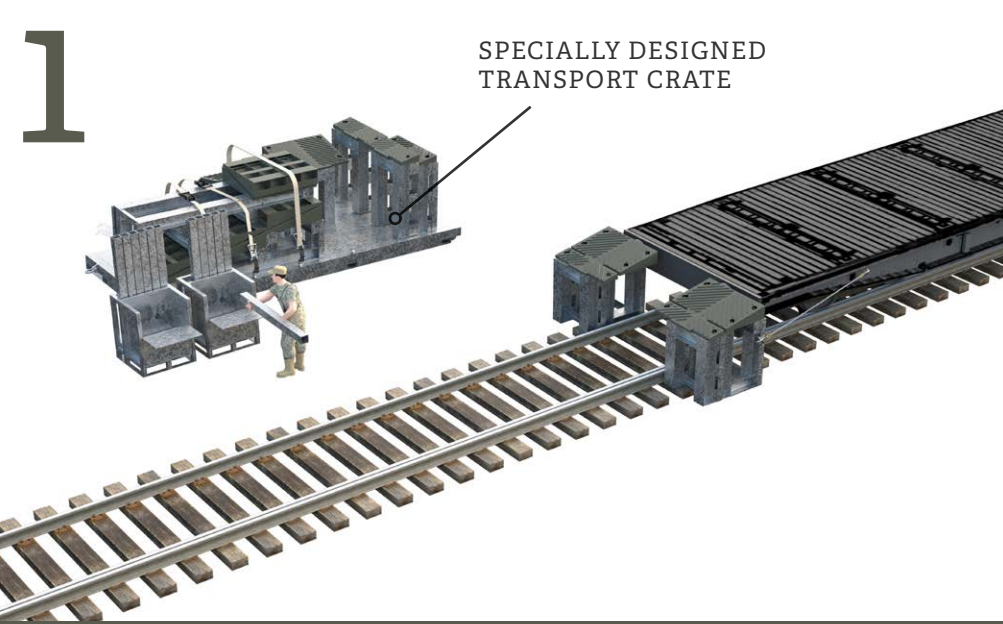
EACH SECTION  
SLOTS INTO THE NEXT

CAN BE THEN LIFTED  
AS PAIRS FOR SPEED



CHAIN FIRST SECTIONS BACK TO RAIL CAR ▼





**EASY ASSEMBLY**  
UNDER 2 HOURS



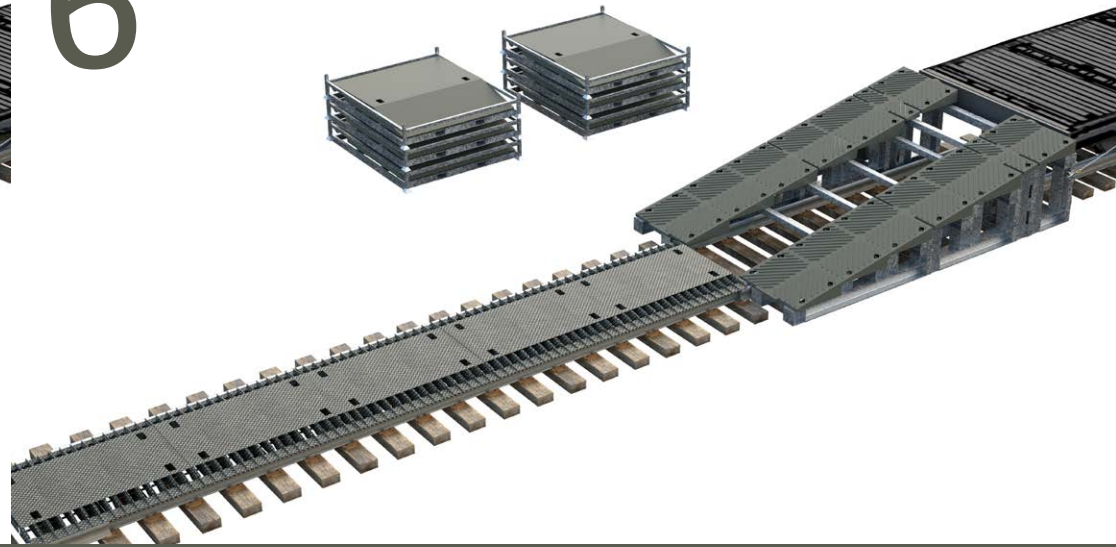


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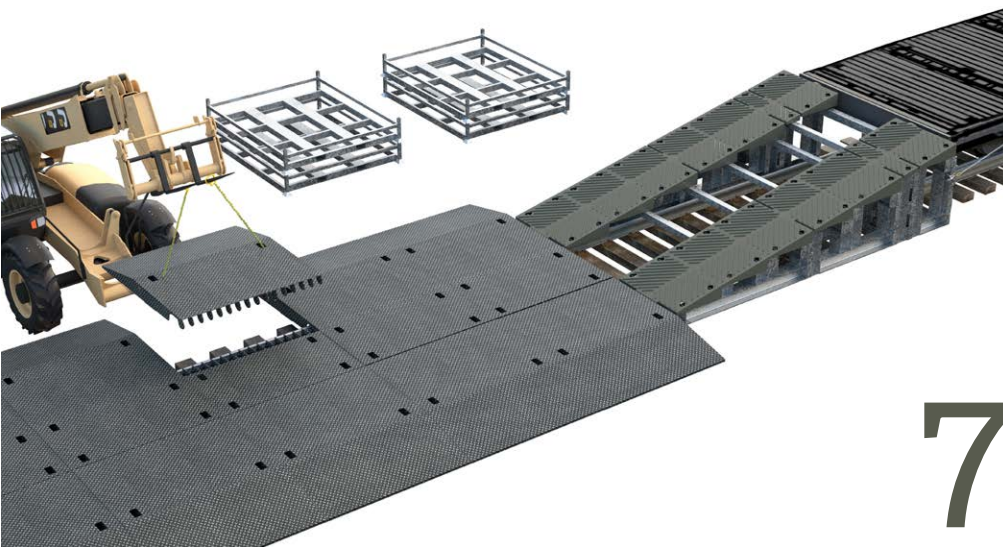


MAT SECTIONS ARE LOWERED BY CHAINS INTO PLACE  
OVER THE CENTRAL RAIL SECTIONS FIRST

6



**EASY ASSEMBLY**  
UNDER 2 HOURS



OUTER MAT SECTIONS ARE INDIVIDUALLY LOWERED INTO  
THE CUSTOM ARTICULATED JOINT TO ALLOW FOR  
VARIABLE GROUND CONDITIONS

7



OUTER SECTIONS ARE SUPPORTED UNDERNEATH BY  
WOODEN DUNNAGE TO ENSURE PROPER BEARING ONTO  
THE GROUND





# ADJUSTABLE HEIGHTS

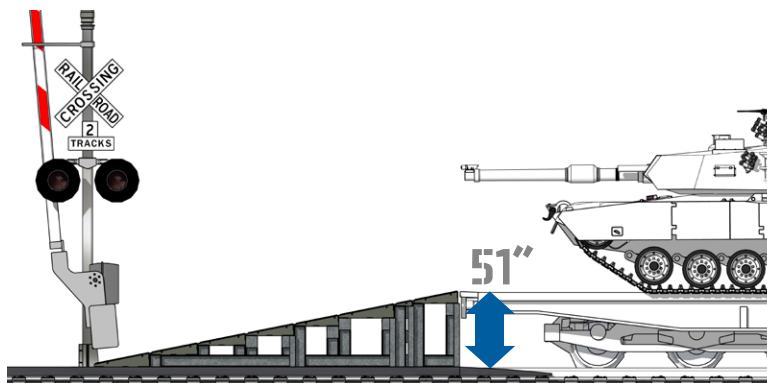


- CAPABLE OF MULTI-FUNCTIONAL LOADING TO TRUCK CONVEYANCES ONTO M872 AND EUROPEAN LOW BED TRAILERS

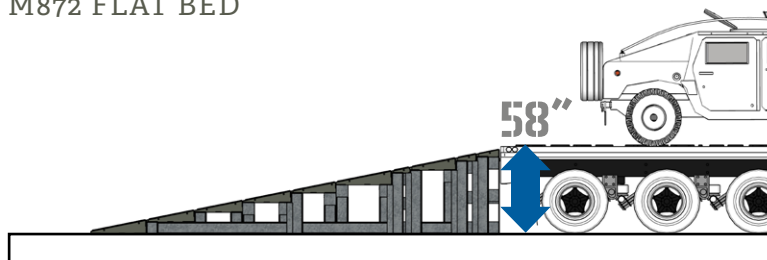
- FUNCTIONAL FOR LOADING / UNLOADING AT LEVEL RAILHEAD & REMOTE TRACK LOCATIONS



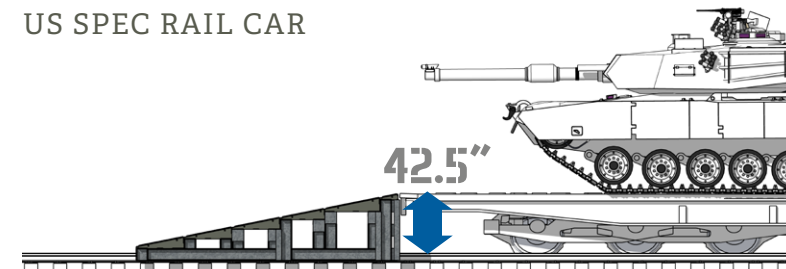
RAIL CROSSING



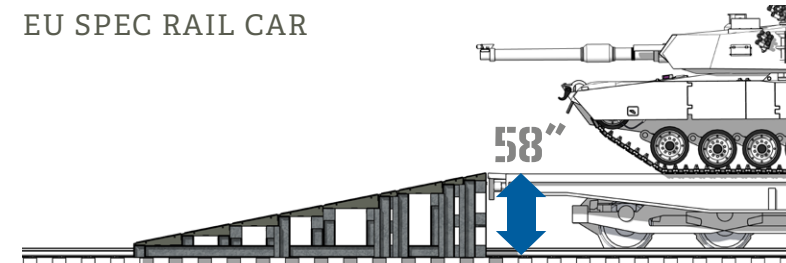
M872 FLAT BED



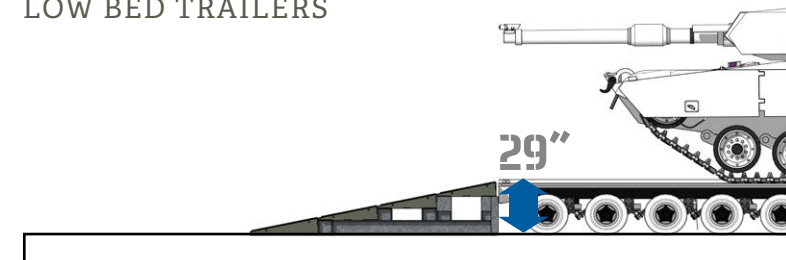
US SPEC RAIL CAR



EU SPEC RAIL CAR



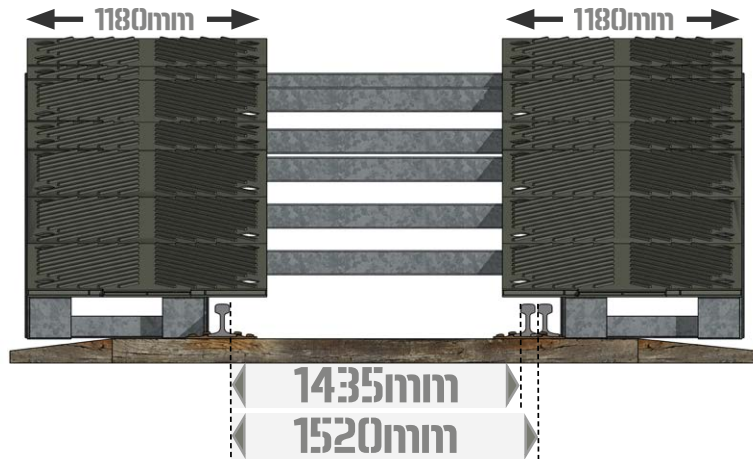
LOW BED TRAILERS



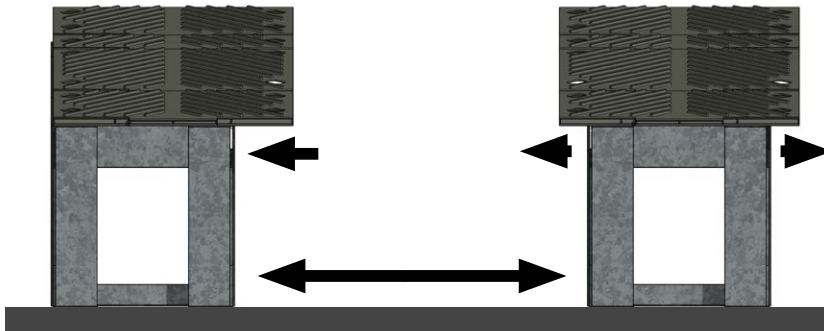




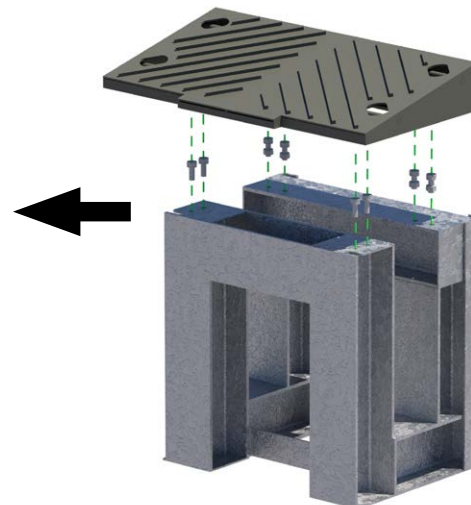
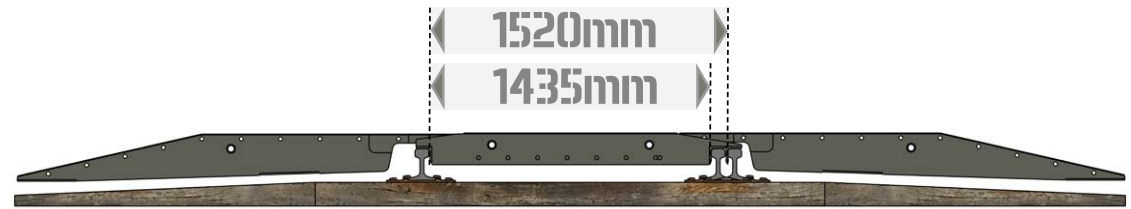
- Ramp works on both standard and broad gauge without contact with the rails



- When ramp is not in use on rails, the overall width can be adjusted along with top wedge adjustment.



- Rail Protector Mat works on both standard and broad gauge



- Top wedges removable for adjustment and maintenance. Hot dip galvanized and painted finish

- Fully hot dip galvanized finish



## SUMMARY

A patent pending military deployable ramp system consisting of two main elements: (a) adjustable ramp assembly to offload vehicles from rail cars/transport trailers, (b) rail track protective mat.

The solution is assembled from sectional modules and used to load and unload heavy wheeled and tracked vehicles from rail cars and other transport platforms without damaging the rail tracks. The design of the system affords the potential to handle such vehicles in a wide range of environments, particularly at remote train track locations or at level crossings or at APOD / SPOD locations. Capacity includes up to and including the heaviest armored battle tanks, specifically M1A2 Abrams SEP3 at 95 short tons. The ramp system is optimized for transport, particularly in ISO shipping containers for ease of deployment by land, air or sea.

### Ramp assembly:

- Approximately 7m x 3.54m x 1.47m (L x W x H) based on all ramp system modules being utilized
- Consists of modules connected to each other to form an assembly
- Functions both at a level crossing, yards, and at a remote rail track locations
- Stacks/nests in the disassembled state to allow for efficient shipping via ISO shipping containers
- Designed for assembly by standard available lifting equipment, e.g. 4K forklift, 10K Atlas, crane, or block and tackle (Capability for all US Army equipment to utilize the ramp)
- Works on level or unprepared ground and must be able to accommodate any slope via self-levelling design that is automatic
- Includes integrated lashing points for sections to be tethered together to enhance its assembled rigidity
- Operation temperature -20 C to +45 C
- Requires only two personnel and MHE to assemble

### Each module of the ramp system:

- Works with rail cars and transport trailers of both US and EU standard design, and with both standard and broad gauge rail systems
- Weighs no more than 4000lbs
- Has no individual dimension longer than 2500mm
- Connects to other modules in a structural manner without need for additional hardware or tools
- Contains structural slinging points integral to the design, not via mounted hardware, with such slinging points balanced for level lifting of each module
- Contains enclosed fork pockets for safe handling
- Contains internal tensioning points for bracing of modules to each other
- Manufactured with non-slip solution of 1/2in square bars continuously welded to the ramp surfaces, with sections angled to provide for water run off integral to the design, not via mounted hardware, with such slinging points balanced for level lifting of each module
- Operation temperature -20 C to +45 C
- Requires only two personnel and MHE to assemble

### The rail protective mat:

- Protects the train tracks against damage during loading or offloading via the ramp assembly
- Is made of multiple sections with no more than 2.3m in any one dimension
- Be modular in scope in 2m length increments, such that a mat of 2, 4, 6, 8, 10 or 12m+ long may be created from its sub-assemblies
- Fits into BICON or 20ft shipping containers
- Accommodates for both rail gauges, standard (1435mm) and broad (1520mm, "Russian")
- Assembles into position by a series of lifts via integral slinging points

All parts of the supply are fully hot dip galvanized to EN ISO 1461 to a minimum thickness of 85 microns. Additionally, the ramp top deck wedges and rail protective mat are either polyester powder-coated or 2-part epoxy painted to customer specifications. Any additional hardware affixed to the ramp or mat modules are either galvanized or stainless steel.

**System benefits from 20 year service life and a FIVE YEAR LIMITED WARRANTY with service contract availability with global manufacturer technician on-site support (subject to separate service contract)**







[WWW.BAN-AIR.COM](http://WWW.BAN-AIR.COM)  
[SALES@BAN-AIR.COM](mailto:SALES@BAN-AIR.COM)  
919-753-8429