



# Marshalling Area

## Installation Staging Area

### Call Forward Area





# Unit Marshalling Area Procedures



- ✘ Unit should complete as many preparations as possible at motor pool / marshalling Area:
  - Check convoy documentation
  - Check radios and frequencies
  - Check vehicle maintenance
  - Check secondary loads
  - Check protective covers & lashing





# Unit Marshalling Area Cont.



- ✘ The unit performs the following equipment preparation activities:
  - Prepares (PMCS) and documents all equipment .
  - Inspects all vehicle documentation to ensure the following:
    - + Verify equipment on UDL
    - + Vehicle Load Card for each piece of rolling stock
    - + Packing Lists (DD Form 1750) for each box or tuff box
    - + HAZMAT is properly documented and certified
    - + Load plans are completed and signed
  - Verify UIC and SUN stenciled in 2-inch lettering on all vehicles on the front and rear bumpers or in corresponding location
  - Cleans all vehicles, pallets and containers to remove to remove insects, dirt, oil and grease



# Marshalling Area Procedures



- ✘ Loads secondary cargo onto vehicles according to the following specifications:
  - Within gross vehicle weight limitations, according to each vehicle's data plate
  - Secured by restraining to the vehicle body or chassis
  - Does not exceed side wall height
  - Ensure BII is secured, to include:
    - + Antennas
    - + Chock blocks
    - + Drip pans
  - HAZMAT is accessible
- ✘ Ensure any required shoring accompanies equipment;  
i.e.: All trailers require parking shoring



# Marshalling Area Procedures Cont.



- ✘ The following activities support the processing of 463L pallets:
  - Unit forwards request for 463L pallets to UMC
  - Unit prepares palletized load, including Pallet Identifier (DD Form 2775) and HAZMAT certifications
  - Unit ensures pallet weights do not exceed aircraft limitations, and pallet heights, weights, and shapes conform to that of the aircraft pallet positions
  - HAZMAT is accessible
  - Loads are blocked and braced; cargo is visible
  - Unit requests transportation support to move loaded pallets to JI
  - Unit provides chains, devices, and shoring for QUADCON's and TRICON's



# Marshalling Area Procedures Cont.



- ✘ The following aircraft-related activities must occur:
  - Ensure component parts are identified for loading
  - Unit provides all equipment to load helicopters and ensure they move with aircraft
  - Unit provides ramps to facilitate rolling helicopters onto USAF aircraft
  - Disassemble helicopters based on identified aircraft
  - Update documentation to reflect disassembled aircraft and components, including the following:
    - + Update UDL
    - + Apply shipping labels to helicopters and any component boxes.
    - + Ensure UICs, SUNs, MSLs and SDDGs are affixed to cardboard or plywood identification board and placed in seat of aircraft



# ITO/Joint Inspection Stations



- ✘ Reception
- ✘ Scale House
- ✘ Maintenance
- ✘ Secondary Cargo/ Hazardous Materials
- ✘ Frustrated Cargo Area
- ✘ Ready Line

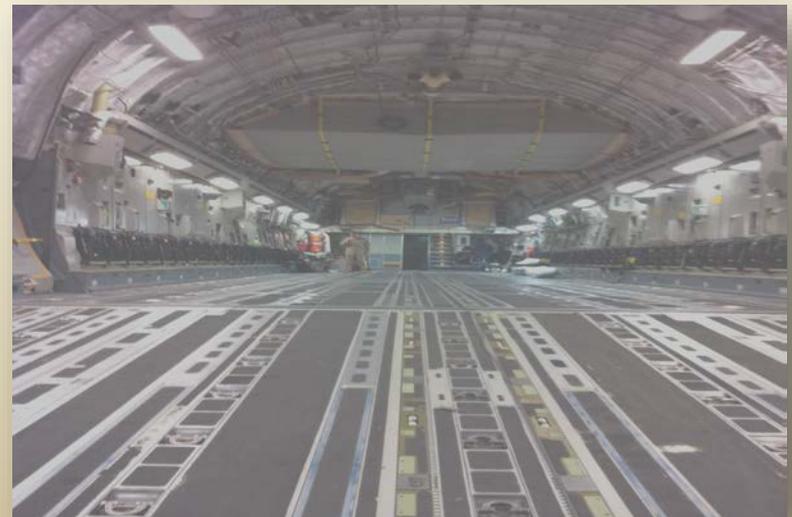




# Reception



- ✘ Vehicles arrive in Chalk Order based on load plans and schedule
- ✘ Vehicles checked for stenciling
  - UIC and SUN stenciled (2-inch) on front and rear.
- ✘ Vehicles checked for fuel levels
  - Fuel Levels: Prime movers – normally  $\frac{3}{4}$  tank if under Chapter 3 (depends on aircraft and location in aircraft)
  - Fuel Levels: Single axle trailers-drained
  - Fuel Levels: Aircraft-150 gallons or  $\frac{3}{4}$  full, whichever is least
- ✘ Sent back to if No-Go





# Scale House



- ✘ Prime movers will have each axle weighed
  - Axles cannot exceed data plate weight
  - GVW cannot be exceeded
  - Trailers must be disconnected and weighed on landing leg(s)
- ✘ If vehicles are overweight, unit must reconfigure load and vehicle weighed again





# Maintenance



- ✘ Vehicles and equipment maintenance condition meet 10/20 standards:
- ✘ Drivers will have DD Form 2404 Equipment Inspection and Maintenance Worksheet for each piece of equipment.
- ✘ Inspection criteria are as follows:
  - No fluid leaks
  - Operational Condition/Brakes operational
  - Batteries secured/Protected
  - Vehicles will have serviceable lifting devices or shackles
  - Vehicles with tow pintles must have pins attached
  - Vehicles tires will be inflated to proper pressure



# Secondary Loads & HAZMAT



- ✘ Ensure equipment is safe and secure for transport:
  - Fire Extinguishers in secured bracket or removed
  - Vehicle equipment Basic Issue Items (BII) secured
  - Proper Blocking & Bracing Material (BBM) and tie-down materials for secondary loads
  - Hazardous Materials are properly certified, classified, packaged, marked, accessible, compatible, labeled/placarded and are in all respects in proper condition for transport according to international and national government regulations with 4 copies of Shippers Declaration for Dangerous Goods, Material Safety Data Sheet (MSDS) and Emergency Response Guide (ERG) provided



# Containers



- ✘ Units must ensure containers are ready for movement at the designated time and location. This includes:
  - 2-inch stenciling on front and back of container
  - Shipment Unit Packing List and Load Diagram (DA Form 5748-R) on inside and outside of container
    - + List HAZMAT first or highlight HAZMAT
  - Packing Lists (DD Form 1750) on each box and attached to DA Form 5748-R
  - Ensure loaded weight does not exceed gross container weight or transport mode limitations
  - Hazardous Materials-Labels are visible





# Containers Cont.



- ✘ Units must ensure containers are ready for movement at the designated time and location. This includes
  - Loaded equipment must be blocked and braced to prevent shifting during transit
  - Loads will not be braced against doors so as to prevent injury to personnel opening container doors
  - Units may have to provide, chains, devices, and shoring for each QUADCON (10 chains, 10 devices) and TRICON (18 chains, 10 devices)
  - Keys will be zip-tied to locks
- ✘ Sensitive items may have tin seals attached after Joint Inspection is completed
- ✘ If units require a guard force for their sensitive items, the following guidelines will be adhered to:
  - Be in place at designated time to be briefed by D/AACG
  - Must coordinate transportation to designated area



# Installation Staging Area - ISA



- ✘ Many installations provide a large area for convoy staging
  - Where the deploying unit's equipment is inspected after it has departed the unit motor pool
  - Vehicles staged in convoy order
  - Where final preparation and external checks are conducted





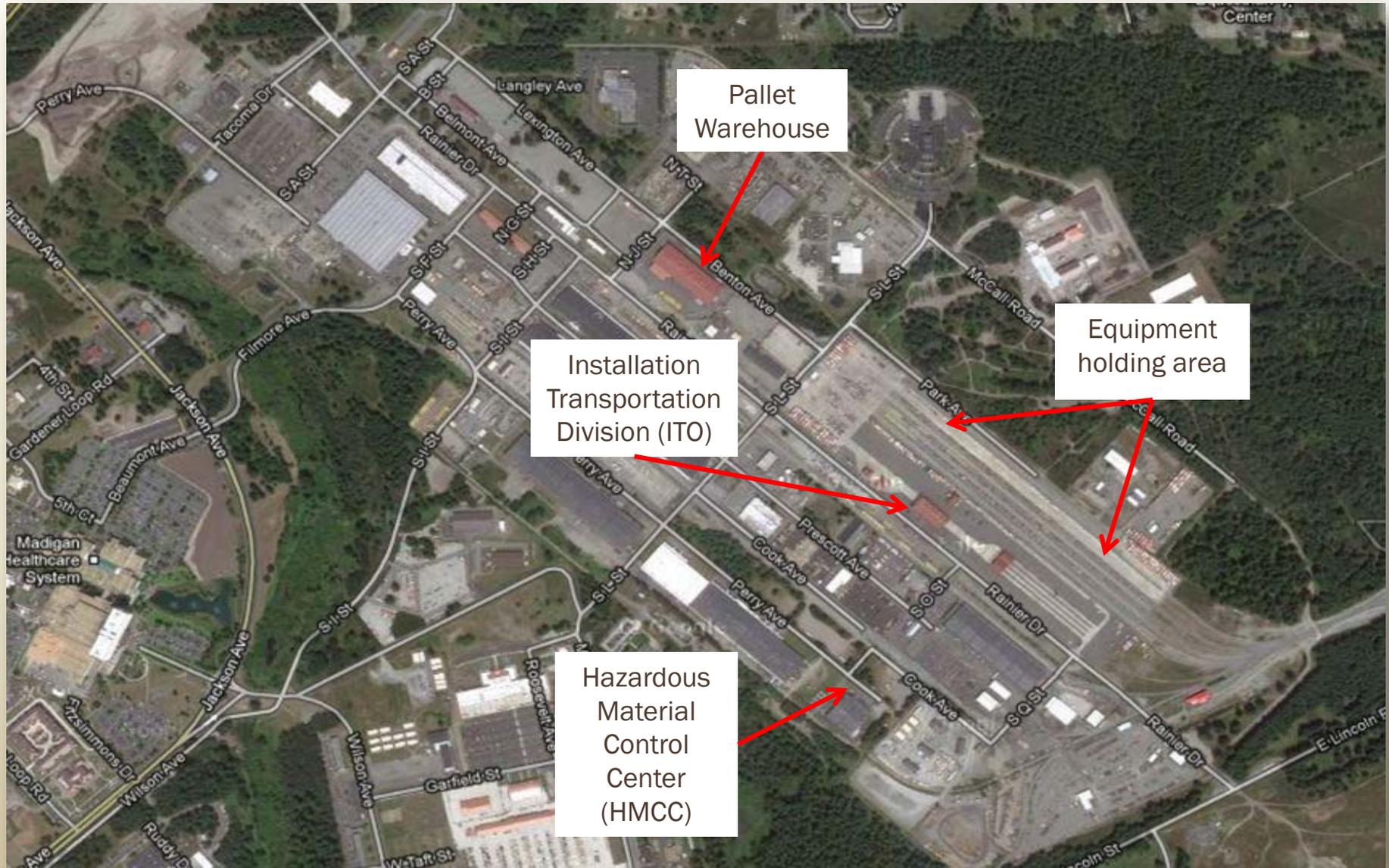
# ISA Pre-movement Coordination



- ✘ UMC or Deployment Distribution Support Brigade (DDSB) personnel inspect the following:
  - Secondary loads for stowage, bracing, covers & lashing
  - Safety equipment and Basic Issue Items present
  - Vehicle weight
  - Fuel levels
  - Maintenance, tires, fluids, & leaks
  - HAZMAT stowage & documentation
  - Documentation & vehicle marking

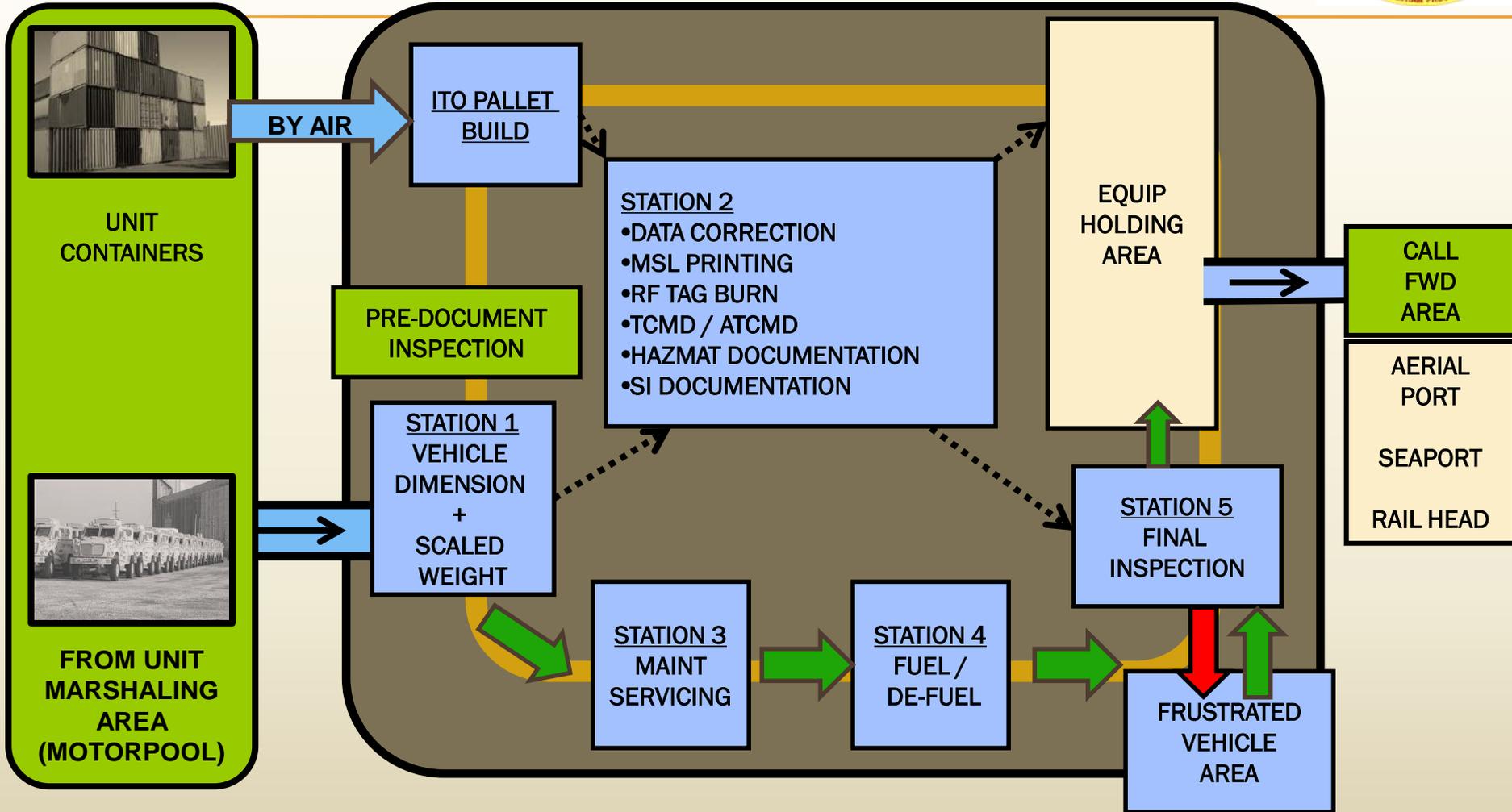


# Logistics Center





# Movement Process Overview



MOBILITY OFFICER

UMO'S

TC-AIMS II OPERATORS

AIR LOAD PLANNER

HAZMAT CERTIFIER

CONTAINER CONTROL

PUSHER TEAM

# Rail Head



OIC: 1<sup>st</sup> BN  
NCOIC: 1<sup>st</sup> BN

Task: Facilitate materiel throughput to RAIL

Purpose: Properly load equipment flowing to RAIL

## Key Dates

Node Operational: 14-Feb-15

Estimated Node Closes: UTC

Detail Requirements: Per 12 hr shift

1st BN	# Pers / Equipment
<b>Troop To Task</b>	
OIC (CPT)	1
NCOIC (SFC)	1
Medics (1 NCO, 2x EM)	2
<b>Maintenance Teams</b>	
Contact Team (1 NCO, 3 x EM)	4
Striker Team(1 NCO, 3 x EM)	4
Defuel Team (1 NCO, 2 EM)	3
Roadguard Safety (4 x NCO, 12 x EM)	16
HAZMAT Certifier	1
Veh Weight Station (1 x NCO, 2 x EM)	3
Load Team x 4 (1 x NCO, 5 x EM)	24
Licensed Operators	30
<b>Rolling Stock Requirement</b>	
Ambulance Veh (FLA)	1
HEMMT Wrecker	1
Water Buffalo	1
Defueler	1
M998	6
MHE	1
<b>Communication Requirement</b>	
Cell Phones (Gov't)	1
FM (Convoy Escort Vehicles)	6
ICOM (Convoy Escort Vehicles)	6
<b>Total Personnel</b>	<b>88</b>
<b>Total Rolling Stock</b>	<b>10</b>
<b>Total Communications</b>	<b>13</b>

## RESPONSIBILITY:

- SAFETY is PRIORITY 1
- Provide direction for inbound equipment through the rail upload process
- Dimensional data verification
- Staging Vehicles in required Rail Sequence
- Provide Service Support
- Medical, Maintenance, Food and Water
- BN will convoy its equipment from staging yard to Ft Bragg Rail

**REPORT ANY FRUSTRATED EQUIPMENT W/ PURPOSE IMMEDIATELY TO BDE MSE:**

## End State:

1. All rail equipment accounted for and moved to the rail site.
2. Operations closed out at the



# Summary

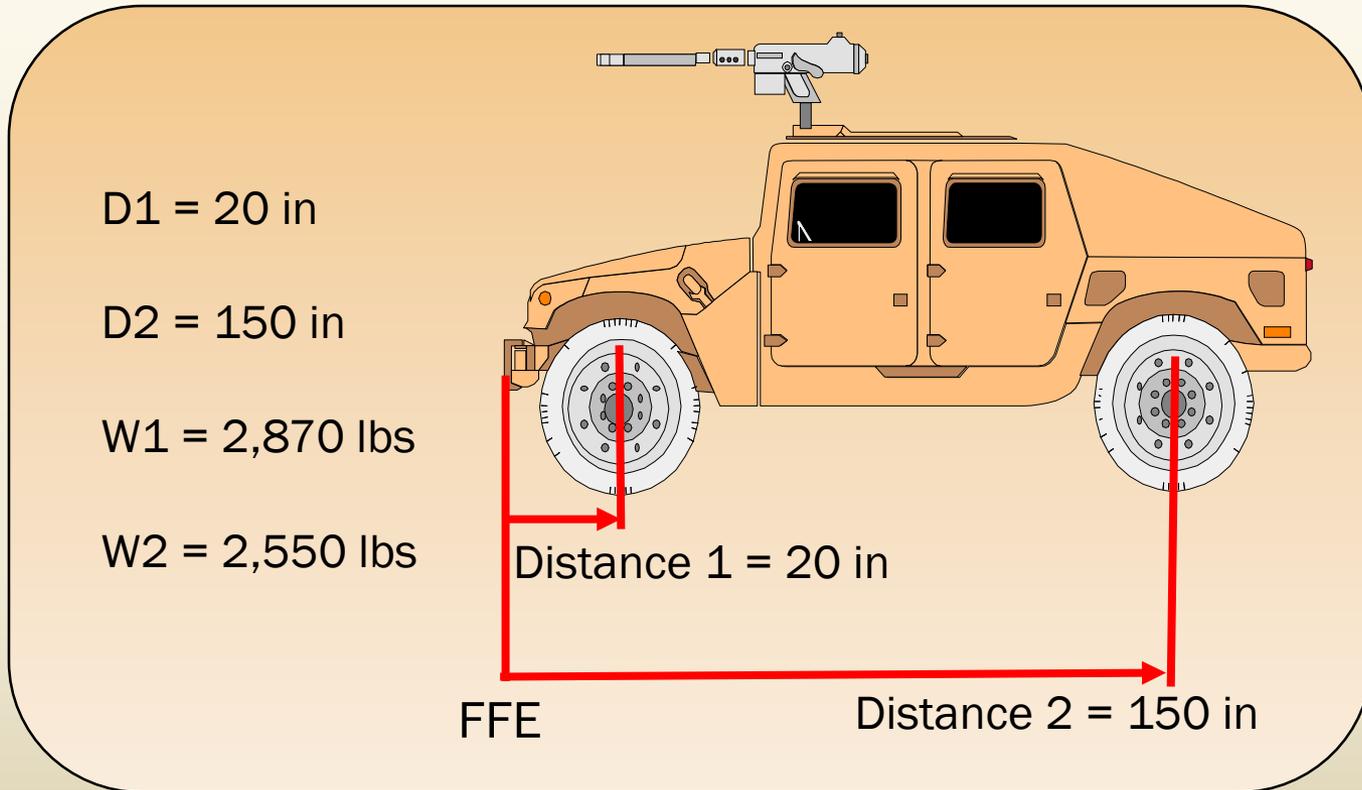


- ✘ Marshalling Area
- ✘ Installation Staging Area
  - Initial Planning
  - Personnel
  - Equipment and Documentation Inspection





# Determining Center of Balance





# Cargo Weighing



- ✘ All cargo offered for shipment must be weighed
  - Portable or fixed scales
  - Indicate actual weight on both sides of items offered for shipment
  - Scale weight must be recorded on all copies of the manifest
- ✘ Accuracy of weights
  - Don't weigh cargo until secondary load is secured
  - Don't add or remove cargo
  - Any cargo additions/deletions require vehicle to be weighed again





# Types of Scales



## ✘ Fixed Scales:

- Permanently installed weighing devices
- Capable of weighing most items of cargo
- Located at most major military installations

## ✘ Portable scales

- Most commonly used have a capacity of 20,000 lbs per scale
- Normally used in multiples of two
- Used extensively at airfields, marshaling areas, and inspection areas





# Types of Scales Cont.



- ✘ When only two portable scales are available:
  - Place scales in front of the tires of first axle
  - Drive vehicle onto scales; keep tires centered on scales
  - Determine axle weight - note each scale weight (right and left side) must be combined to obtain the axle weight
  - Continue process until all axles are weighed

*\* Driver and/or passengers must be out of the vehicle prior to weighing*





# Types of Scales Cont.



## ✘ Weighing pallets:

- Each 463L pallet must be weighed
- Scale weights must be recorded on all copies of the manifest
- Place loaded pallet evenly on two portable scales
- 3 pieces of dunnage must be weighed with pallet
- Add the two scale weights together to get pallet gross weight
- Ensure scale weight is clearly marked on one 88" side and one 108" side of the pallet





# Wheeled Vehicle Measurement





# Center of Balance Terminology



- ✘ CB = Center of Balance - the point of balance of a piece of cargo
- ✘ FAW = Front/Forward Axle Weight (in pounds)
- ✘ IAW = Intermediate Axle Weight (in pounds)
- ✘ RAW = Rear Axle Weight (in pounds)
- ✘ GW = Gross Weight (in pounds) - the total weight of a piece of cargo, including all secondary loads, found by adding individual axle weights
- ✘ FFE = From/From Front Forward Edge - Distance in inches from the most forward edge of a vehicle to its C/B, typically used as the RDL
- ✘ RDL = Reference Datum Line - point from which all measurements are taken, normally the FFE of a vehicle
- ✘ Moment = Product (inch-pounds) obtained by multiplying the axle weight (pounds) by a distance (inches) from the RDL
- ✘ FOH = Front Overhang - Distance in inches from FFE to center of front axle
- ✘ WB = Wheel Base - Distance in inches from center of front axle to center of rear axle or center of tandem axles



# Center of Balance Criteria



- ✘ C/B markings not required on individual 463L pallets, if built correctly C/B will be at or near the center
- ✘ C/B marking required for married pallets & pallet trains
- ✘ Mark the C/B on all items of cargo that meet the following criteria:
  - All vehicles
  - Any items of cargo 10 feet or longer
  - Any item with a CB point other than its center

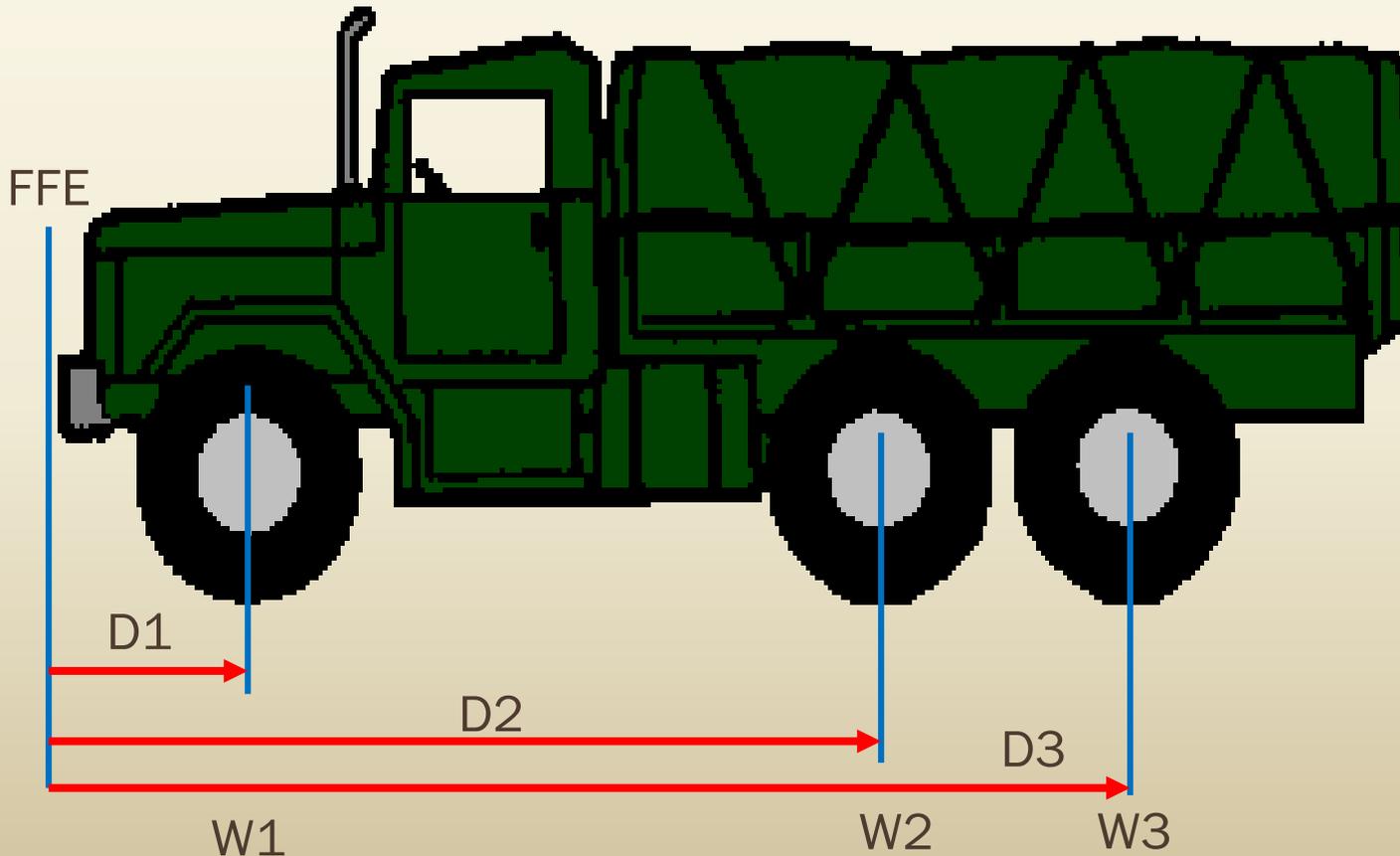




# Wheeled Vehicle C/B

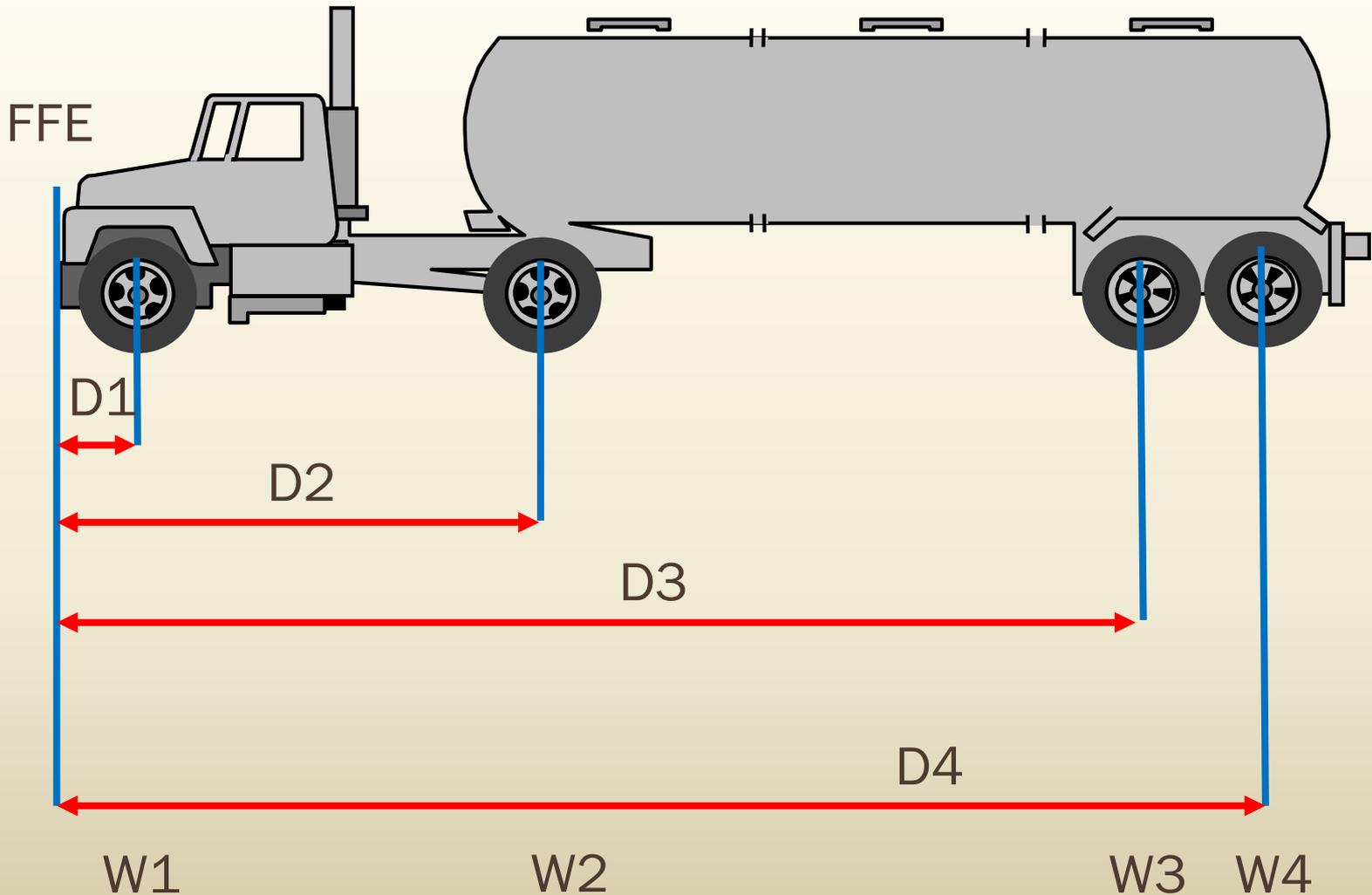


- ✘ Determine distance from front forward edge (FFE) to the middle of the front, intermediate, & rear axles





# Wheeled Vehicle C/B Cont.





# Wheeled Vehicle C/B Cont.



- ✘ The only vehicles that require a combined C/B are those tractor-trailers that will remain coupled during flight





# Wheeled Vehicle C/B Cont.



- ✘ W1= Front axle weight in pounds
- ✘ W2 = Intermediate axle weight
- ✘ W3= Rear axle weight
- ✘ D1= Distance in inches, from FFE to Front axle
- ✘ D2= Distance from FFE to Intermediate axle
- ✘ D3= Distance from FFE to Rear axle
- ✘ Gross Weight = Sum of W1, W2, W3... (sum of axle weights)

$$C/B = (W1 \times D1) + (W2 \times D2) + (W3 \times D3)$$

Gross Weight

\* *Rounded to the nearest inch - Standard rounding*



# Wheeled Vehicle C/B Cont.



$W1 = 5,000$  lbs

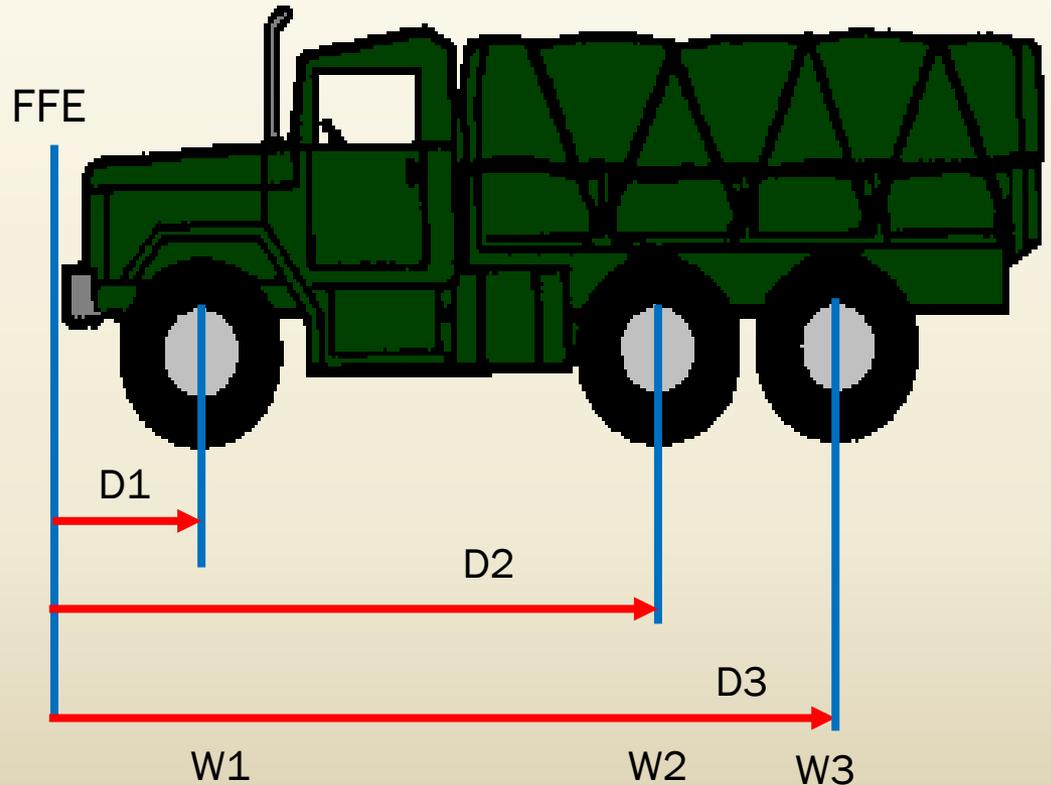
$W2 = 5,000$  lbs

$W3 = 5,000$  lbs

$D1 = 35$  inches

$D2 = 131$  inches

$D3 = 177$  inches





# Wheeled Vehicle C/B Cont.



$$CB = \frac{(W1 \times D1) + (W2 \times D2) + (W3 \times D3)}{GW}$$

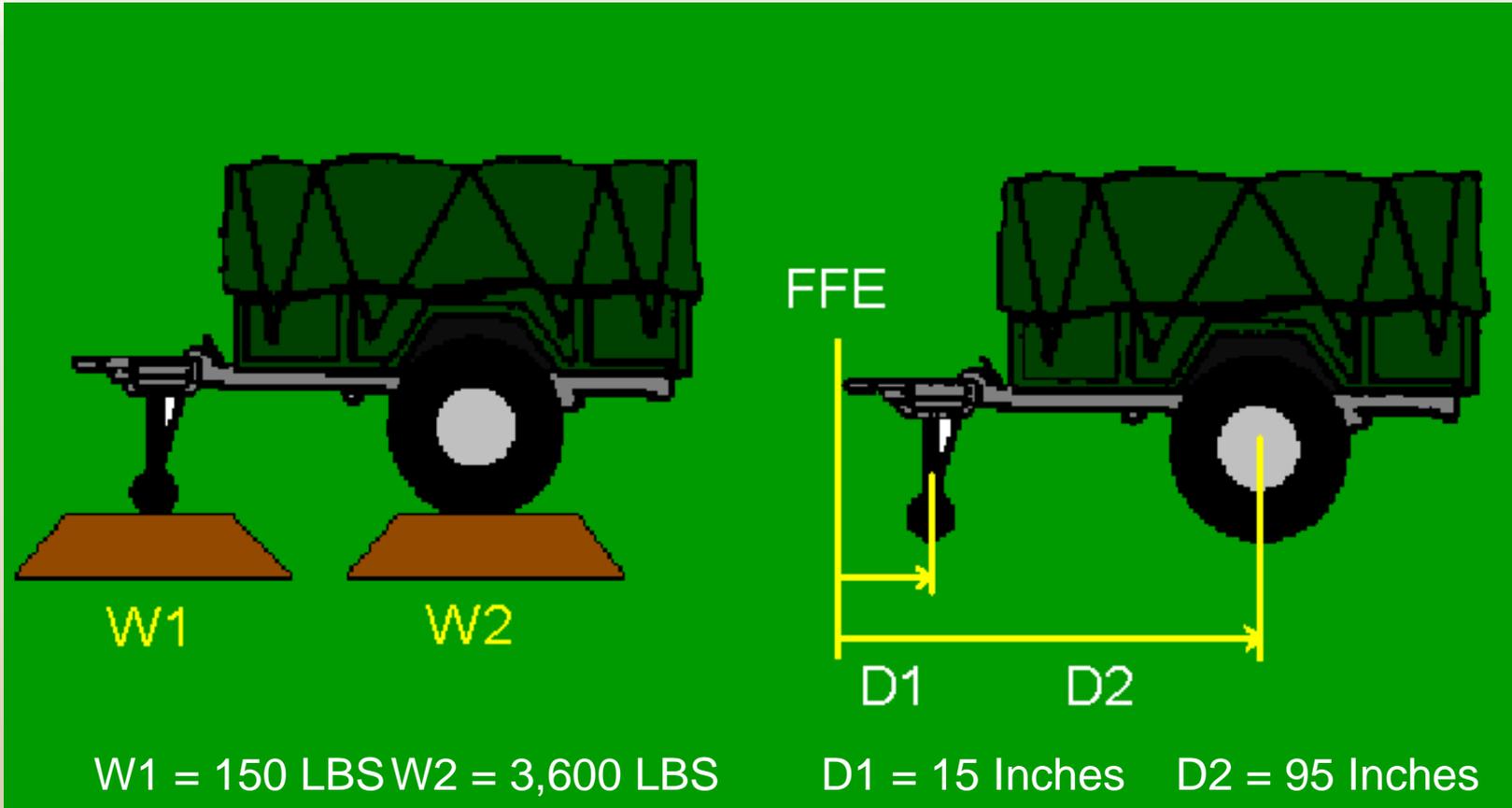
$$CB = \frac{(5,000 \times 35) + (5,000 \times 131) + (5,000 \times 177)}{15,000}$$

$$CB = \frac{175,000 + 655,000 + 885,000}{15,000} = \frac{1,715,000}{15,000}$$

$$CB = 114.33 \longrightarrow 114 \text{ inches (rounded to nearest inch)}$$



# Trailer C/B





# Trailer C/B Cont.



$$CB = \frac{(W1 \times D1) + (W2 \times D2)}{GW}$$

$$CB = \frac{(150 \times 15) + (3,600 \times 95)}{3,750}$$

$$CB = \frac{2250 + 342,000}{3,750}$$

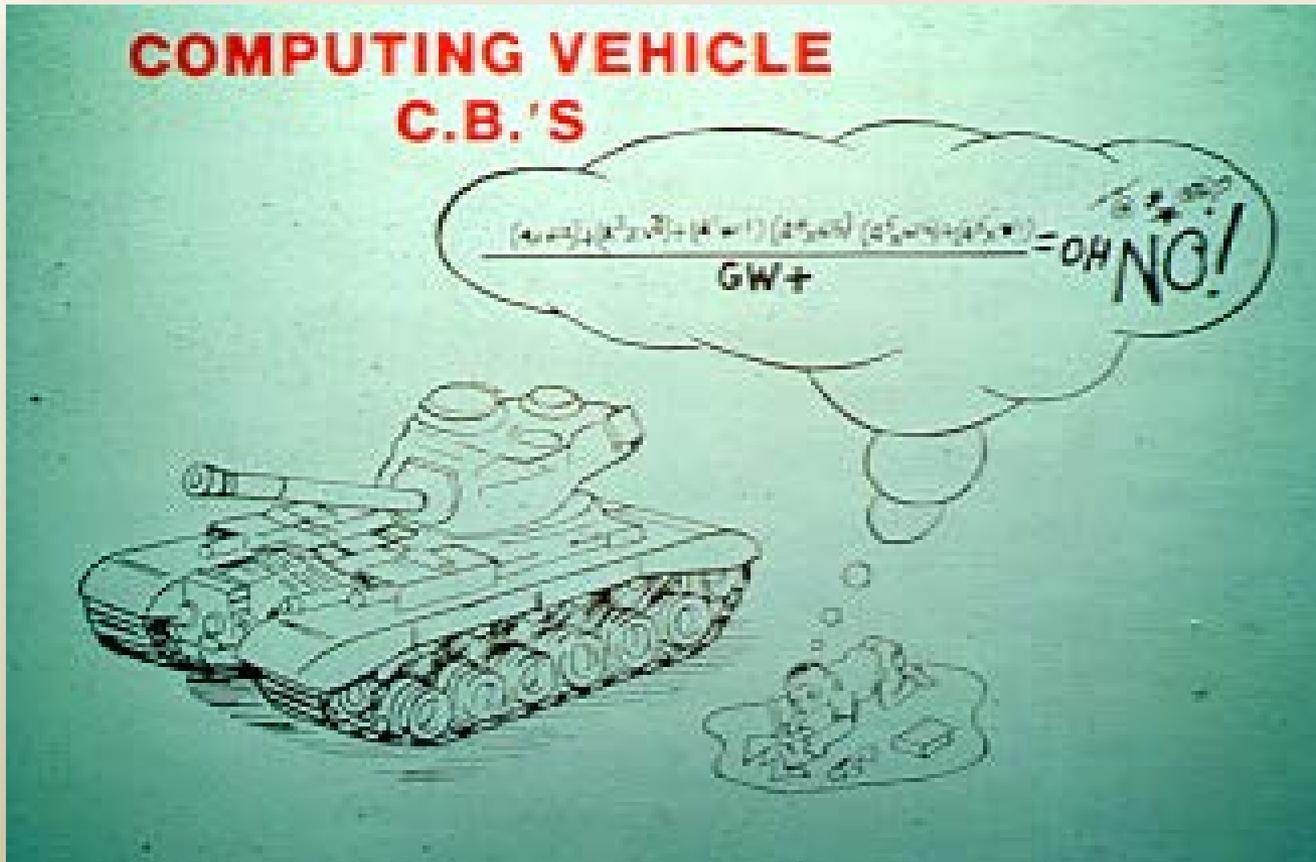
$$CB = 91.8 \rightarrow 92 \text{ Inches}$$



# Tracked Vehicle C/B



- ✘ How do you determine the individual axle weights?



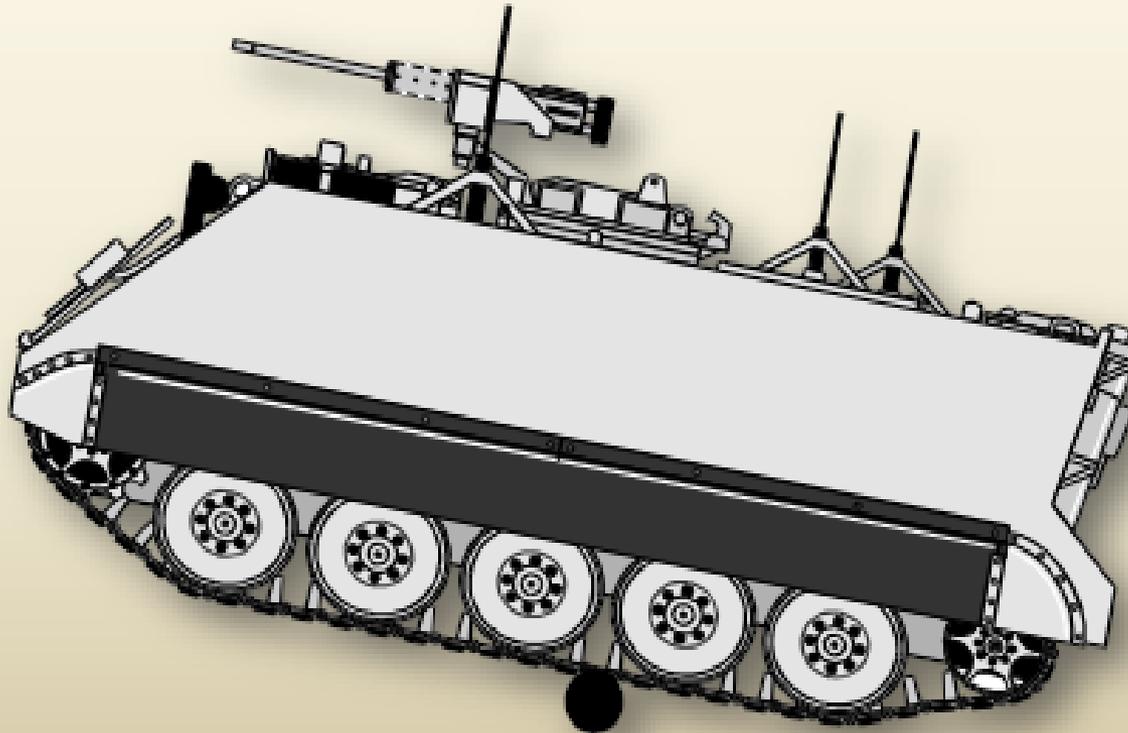


# Tracked Vehicle C/B Cont.



## ✘ Tracked vehicle C/B:

- Drive the vehicle over an object large enough to allow it to teeter
- Mark location of where vehicle teeters as the C/B

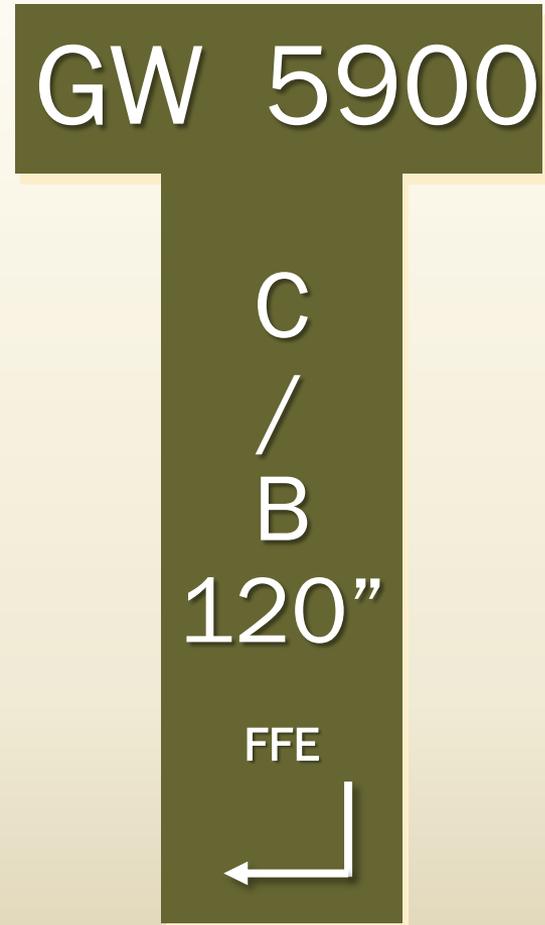




# Center of Balance Marking



- ✘ After computing C/B of the vehicle:
  - Mark its location and gross weight on both sides of the vehicle
  - Use weather resistant masking tape and form the letter "T"
  - Use grease pencil/magic marker
- ✘ "T" marking
  - The horizontal portion of the "T" will contain the gross weight
  - The vertical portion indicates the exact position of C/B
  - Indicate number of inches from the RDL to the C/B location and mark axle weights above each axle on both sides of the vehicle





# Center of Balance Marking Cont.



- ✘ Equipment that has cargo carrying capability will either be marked as empty or loaded
- ✘ Trucks and towed equipment transported coupled will have an individual C/B on each item, allowing them to be disconnected and shipped on separate aircraft
- ✘ Items not weighed or marked correctly will not be accepted for shipment

