

## TRAINER GUIDANCE

### Line Item 1.6 *Build-up single pallet*

<b>Prerequisites:</b>	<ul style="list-style-type: none"> <li>A. Trainee will have all required PPE available</li> <li>B. Trainer will establish a timeline for completing the required training with the trainee.</li> </ul>
<b>Training References:</b>	<ul style="list-style-type: none"> <li>A. AFI 24-605, Vol 2, section 3C</li> <li>B. T.O. 1C-17A-9, Loading Instructions, section IV</li> <li>C. T.O. 1C-5M-9, Loading Instructions Manual, chapter 4</li> <li>D. T.O. 35D33-2-2-2, 463L Air Cargo Pallets</li> <li>E. T.O. 35D33-2-3-1, Maintenance and Repair Instructions Air Cargo Pallet Net</li> </ul>
<b>Additional Supporting References:</b>	N/A
<b>Training Support Material:</b>	Possess all required Personal Protective Equipment, i.e., gloves, hearing protection, safety-toed boots, and reflective gear (during darkness or inclement weather)
<b>Specific Techniques:</b>	This lesson plan is designed for hands-on (demonstration/performance). Trainers will demonstrate, document, and verify training using a variety of hands-on scenarios with actual missions or simulated training scenarios.
<b>Criterion Objective:</b>	<p><b>A. Upon completion of training, trainee will be able to: Build a Single pallet</b></p> <ul style="list-style-type: none"> <li>1. Identify the usable space and loading constraints of a 463L pallet</li> <li>2. Identify how cargo is selected for palletization</li> <li>3. Describe how cargo is built on a 463L pallet</li> <li>4. Identify weight and height limits of 463L pallets for given aircraft</li> <li>5. Identify when pallet covers are needed</li> <li>6. Identify the types of restraint used to secure cargo on pallets</li> <li>7. Identify which restraint(s) to use based on the type, weight, height of the cargo</li> <li>8. Identify the procedures for placing documents on a pallet</li> </ul> <p><b>B. Trainee will:</b></p> <ul style="list-style-type: none"> <li>1. Review the training objectives.</li> <li>2. Review the training references.</li> </ul> <p><b>C. Trainer will:</b></p> <ul style="list-style-type: none"> <li>1. Review the training objectives.</li> <li>2. Review the training references.</li> <li>3. Conduct the training using the attached lesson plan.</li> <li>4. Perform remedial training if necessary.</li> <li>5. Comply with the duties outlined in AFI 24-605, Vol 2</li> </ul>

<b>NOTES to Trainer:</b>	<p>This lesson plan is designed for hands-on training (demonstration-performance). Aerial port missions are inherently different from station to station; training sessions may or may not easily lend themselves to hands-on training. Therefore, it is imperative that trainers demonstrate, document and verify training using a variety of hands-on and scenario-based techniques to achieve the desired proficiency prior to signing the Task Evaluation Checklist (TEC).</p> <p>Prior to accomplishing the practical application of this lesson, ensure the trainee has the necessary PPE; i.e., gloves, safety-toed boots, hearing protection, and reflective gear during hours of darkness. Use caution while maneuvering around the Mechanized Material Handling System (MMHS), if applicable.</p> <p>Brief the trainee to remain aware of vehicles/Material Handling Equipment (MHE) operating in the warehouse/pallet grid yard. Additionally, remind the trainee to remove all rings and exposed jewelry.</p>
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## TASK STEPS

### Line Item 1.6 *Build-up single pallet*

#### **Learning Objective 1** *Identify usable space and loading constraints:*

- A. Usable space of a 463L pallet is 104” x 84”
- B. Cargo must fit the contour of the aircraft it is going to be loaded on.
- C. A full net set can restrain 10,000lbs of cargo on a 463L pallet.

#### **Learning Objective 2** *Identify how cargo is selected for palletization:*

- A. The following filters determine which pieces of cargo to load onto a pallet in order of importance with “1” being the first criteria:
  - 1. Destination – Where is it going?
  - 2. Priority – What is most important?
  - 3. System Entry Time (SET) – which item has been here the longest?
  - 4. Select cargo to maximize utilization of the pallet and aircraft

#### **Learning Objective 3** *Describe how to build cargo on a 463L Pallet:*

- A. Once cargo has been selected for palletization, follow the guide below on how to place it on the 463L pallet.
  - 1. Start with the heavier items. They go on the bottom to form a foundation that is less likely to be crush. A crushed box can cause the built up pallet to collapse.
  - 2. Try to balance weighty evenly across the usable dimension
  - 3. Alternate items to form an interlocking grid with each consecutive level.
- B. Every pallet will be placed on acceptable dunnage/support. No pallet will rest flat on the ground. Acceptable dunnage/support is listed as follows:

1. Three rows of warehouse type conveyors on hard surface material or pallet trailer.
2. Three pieces of dunnage at least 3” thick, at least 88” long, uniform in height and free of protrusions/sharp edges. Arrange wood to provide three lines of support.
3. Sand bags. Use nine sand bags at a minimum.

**Learning Objective 4** *Identify weight and height limits of 463L pallets for given aircraft:*

- A. The typical limits of a 463L pallet is 96” tall and 10,000lbs using a full net set
- B. Each aircraft has different limitation and configurations for pallets and pax
  1. These configurations determine how cargo can be built
  2. Pallet modules assist in determining what can go on which planes and where

<b>Module Mode</b>	<b>Module Code Descriptions</b>
<b>A</b>	<b>Non-Unitized Rolling Stock</b>
<b>B</b>	<b>Pallet 61"-84" B-747 (PPS 1C, 2R, 3-6L, 18-21R), B-767 (PPS M11)</b>
<b>C</b>	<b>Containerized, Skidded, or Loose Cargo</b>
<b>D</b>	<b>Pallet Contoured for KC-10 (PPS 13L)</b>
<b>E</b>	<b>Belly Pallet or Non-Stackable Commodity(s) Up to 60" for B-747, MD-11, or B-777</b>
<b>F</b>	<b>Pallet Contoured for MD-11 (PPS 2-14 L&amp;R) and B-767 (PPS M1-M10 L&amp;R)</b>
<b>G</b>	<b>Pallet with a Propeller</b>
<b>H</b>	<b>Ramp Pallet w/20" Aisleway for C-130 and L-100</b>
<b>I</b>	<b>ISU Pallet (All Types)</b>
<b>J</b>	<b>Pallet w/6" Aisleway for C-130/L-100</b>
<b>K</b>	<b>Pallet Contoured for KC-135 (PPS 1-6)</b>
<b>L</b>	<b>Pallet 85"-96" for C-5, C-17, C-130, B-747 (PPS 7-17 L, 22-33 R), B-777 (PP 16C), MD11 (PP 18C)</b>
<b>M</b>	<b>Pallet 96" &amp; Up for C-5/C-17 Only</b>
<b>N</b>	<b>Pallet Contoured for KC-10 (PPS 2-10 L&amp;R), B-777 (PPS 1 L&amp;R, 15 L&amp;R)</b>
<b>P</b>	<b>Pallet Contoured for KC-10 (PPS 1 L&amp;R), MD-11 (PPS 1 L&amp;R)</b>
<b>Q</b>	<b>Pallet Contoured for KC-10 (PPS 11-12 L&amp;R), MD-11 (PPS 15-17 L&amp;R)</b>
<b>R</b>	<b>Pallet for C-5 Ramp (14" Aisleway PPS 1, 2, 35 &amp; 36) and AN-124 (PPS 1, 2, 37 &amp; 38)</b>
<b>S</b>	<b>Logistics Pallet Train (2" Couplers)</b>

<b>T</b>	<b>Logistics Pallet Train (1" Couplers)</b>
<b>U</b>	<b>ADS Pallet Train (1" Couplers)</b>
<b>V</b>	<b>T-1 for LGS Pallet</b>
<b>W</b>	<b>T-1 for ADS Pallet</b>
<b>X</b>	<b>Pallet Contoured for B757 Combi (PPS 1-10 ADS) (PPS 1-8 LGS)</b>
<b>Y</b>	<b>ADS Pallet Train (2" Couplers)</b>
<b>Z</b>	<b>Pallet Contoured for B-777 (PPS 2-11 L&amp;R, 12R, 13-14 L&amp;R)</b>

**Learning Objective 5** *Identify when pallet covers are needed:*

- A. Plastic covers are used to protect cargo from the elements
- B. Perishable goods (food items) do not receive any pallet covers
- C. A general cargo pallet receives one pallet cover
- D. Household goods receive 2 pallet covers, a third is added over the net-set when stored outdoors or transported during inclement weather

**Learning Objective 6** *Identify the types of restraint used to secure cargo on pallets:*

- A. Full net assembly consists of two HCU-7/E Side Nets (green) and one HCU-15/C Top Net (usually yellow). Used for tall cargo roughly 76"-96"
  - 1. One side net weighs 22 lbs.
  - 2. One top net weighs 21 lbs.
  - 3. The total weight for a complete net set is 65 lbs.
- B. Sides and 7: use 2 side nets and 7 CGU-1/B straps. Used for mid-sized cargo roughly 45"-76" tall
- C. Using only a top net is authorized when the cargo is not bulk, under 45" tall and under 2,500 lbs. If the cargo exceeds 2,500 pounds, use CGU-1/B straps as belly bands.

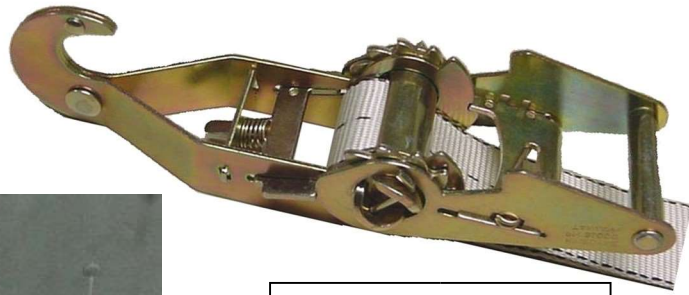
**Learning Objective 7** *Identify which restraint(s) to use:*

- A. There are many different ways to secure cargo to pallet/pallet trains. The three different mechanisms used are:
  - 1. CGU-1B straps.
  - 2. Chains and devices: You can use the chains and devices in three different ways.

Chain and Device



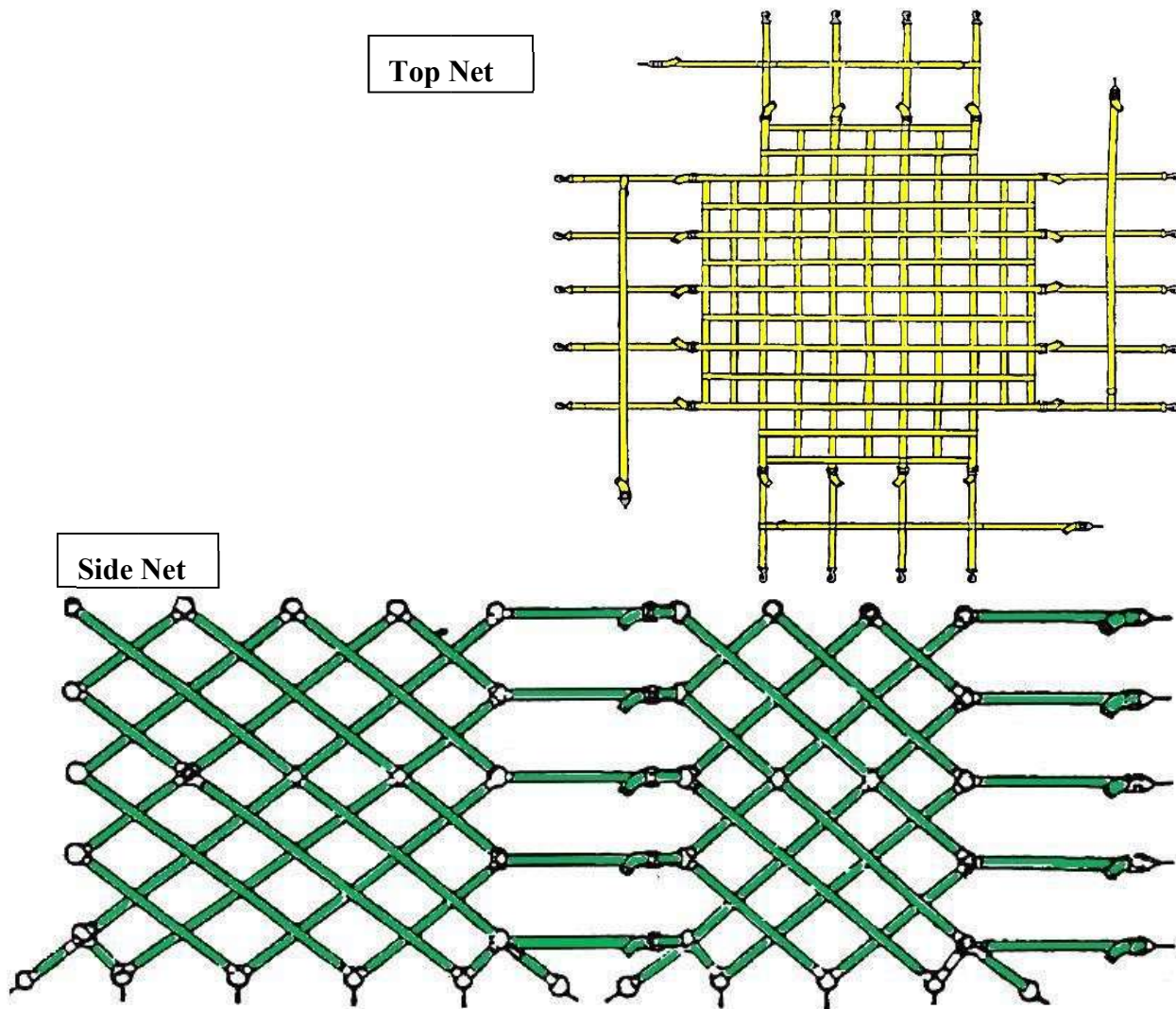
CGU-1/B Cargo Strap



3. General tie-down method
4. Chain gate
5. Chain bridle

B. 463L nets: The use of nets on a pallet train is to secure additional cargo. Ensure the cargo is secured to the maximum extent possible. Attach the nets accordingly:

1. Two pallet train-use three side nets and two top nets.
2. Three pallet train-use four side nets and three top nets.



**NOTE:** There are no specific training aids or guidance in demonstrating these. The trainer will instruct using hands on demonstration.

**Learning Objective 8** *Identify the procedures for placing documents on a pallet:*

- A. Place documentation in weather resistant bags
- B. Place documentation on a long and a short side at a minimum
- C. Place documentation at roughly eye level on the left hand side for consistency