



Aerial Material Handling Safety

Presented by Andy Netzel

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- Inspection and Unit Set Up
- Basic Safe Lifting Practices
- Using Capacity Charts

Don't just Inspect – Repair!



No Such Thing as a Small Leak



Winch Drum Inspection



⚠️ WARNING

Death or serious injury can result from falling loads. Winch cable anchors are not designed to hold rated capacity. Keep a minimum of **four** wraps on the drum.



Jib Inspection Items

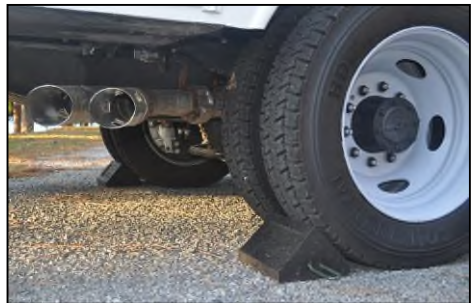


- Winch rope condition and reeving
- Hook – must have functional throat latch
- Jib – pins and pin retaining lanyards in place
- Sheaves
- Capacity charts and pointers are intact and legible



Proper Operation – Setting Outriggers

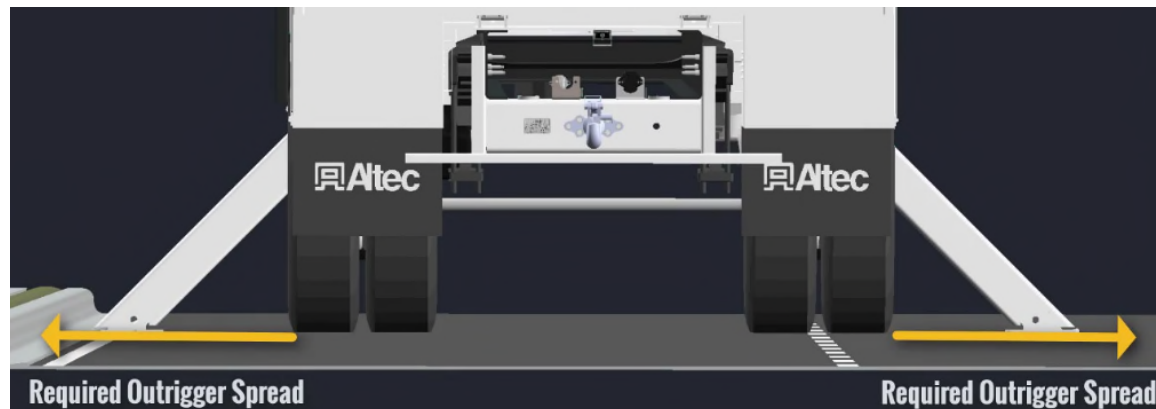
- ❖ Read the Operator's Manual
- ❖ Chock the wheels properly
- ❖ Outrigger support surfaces
 - ❖ Firm and Level surface
 - ❖ Able to support outrigger load
 - ❖ Use outrigger pads
 - ❖ Cribbing/blocking if needed



Proper Operation – Outrigger Spread



- ❖ Critical to unit stability – read the manual!
- ❖ Operators must know their unit
- ❖ Extend 3 - 4” after ground level
- ❖ Account for pad height



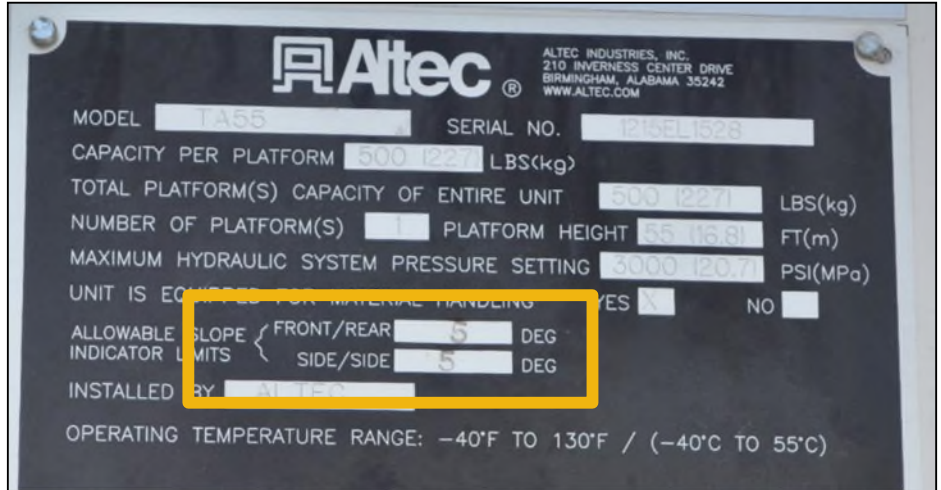


Proper Operation – Leveling the Unit

- ❖ Critical for stability

- ❖ Level within limits

- ❖ Serial number placard
- ❖ Slope indicators



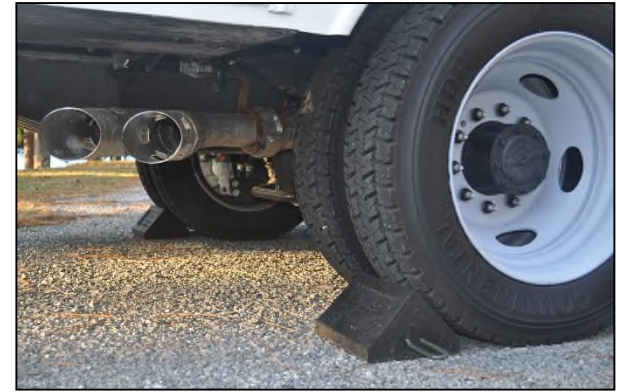
- ❖ Slopes may require cribbing and blocking



Unit Setup and Leveling



- Chock the tires
- Proper outrigger spread
- Use proper cribbing and blocking
- Always strive for a level unit





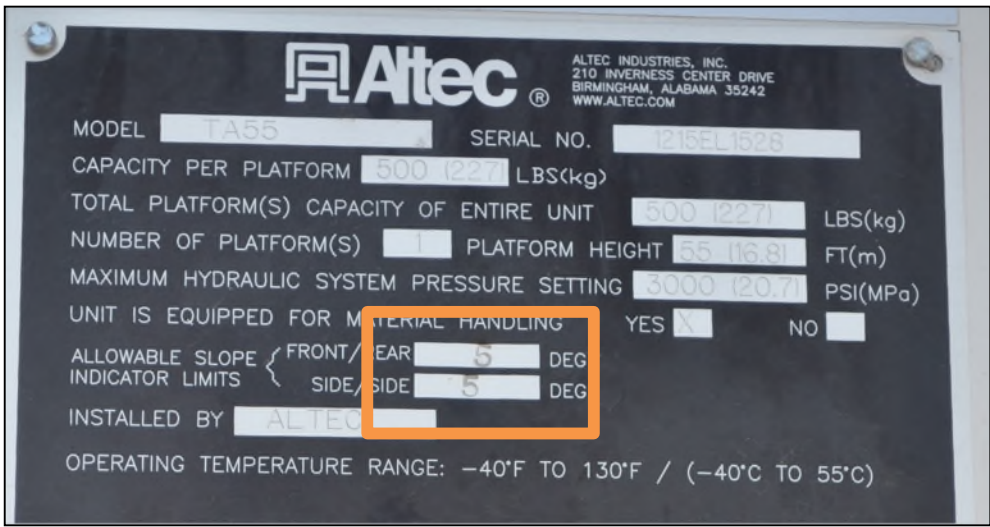
Watch for Supporting surfaces





Unit Setup and Leveling

- Aerials – Level within limits
- Serial Placard and Slope Indicators



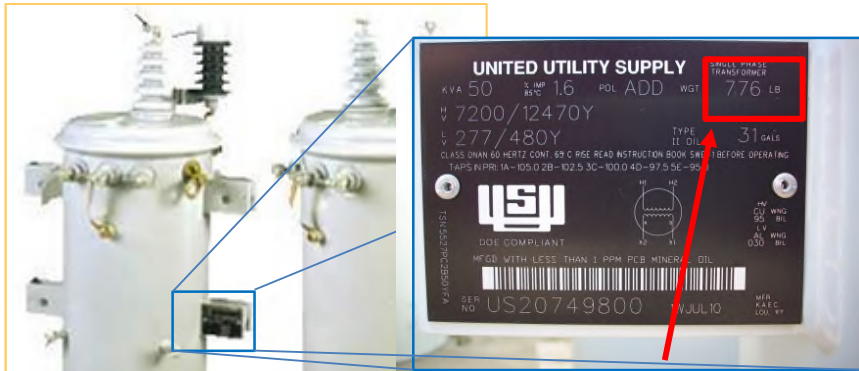
Safe Lifting Practices



- Inspect rope, hook and rigging before use
- Don't exceed capacities of jib, boom, rope, hook and rigging
- Use load capacity charts to find unit capacity

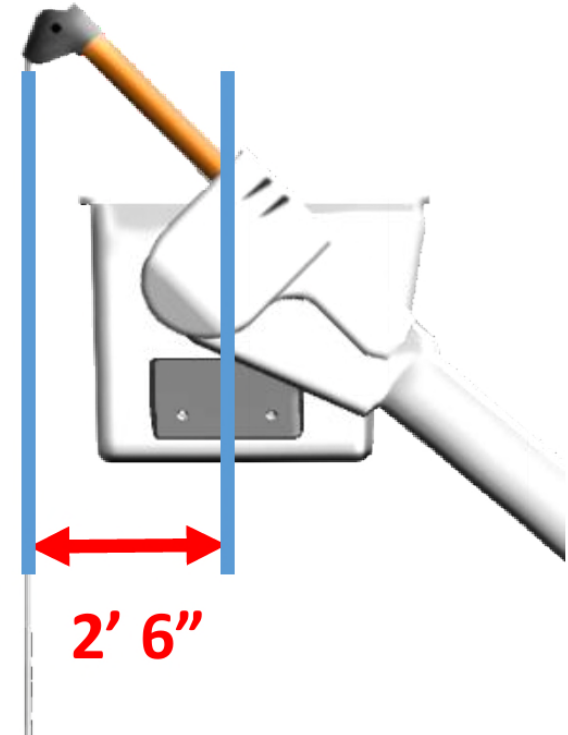


Safe Lifting Example



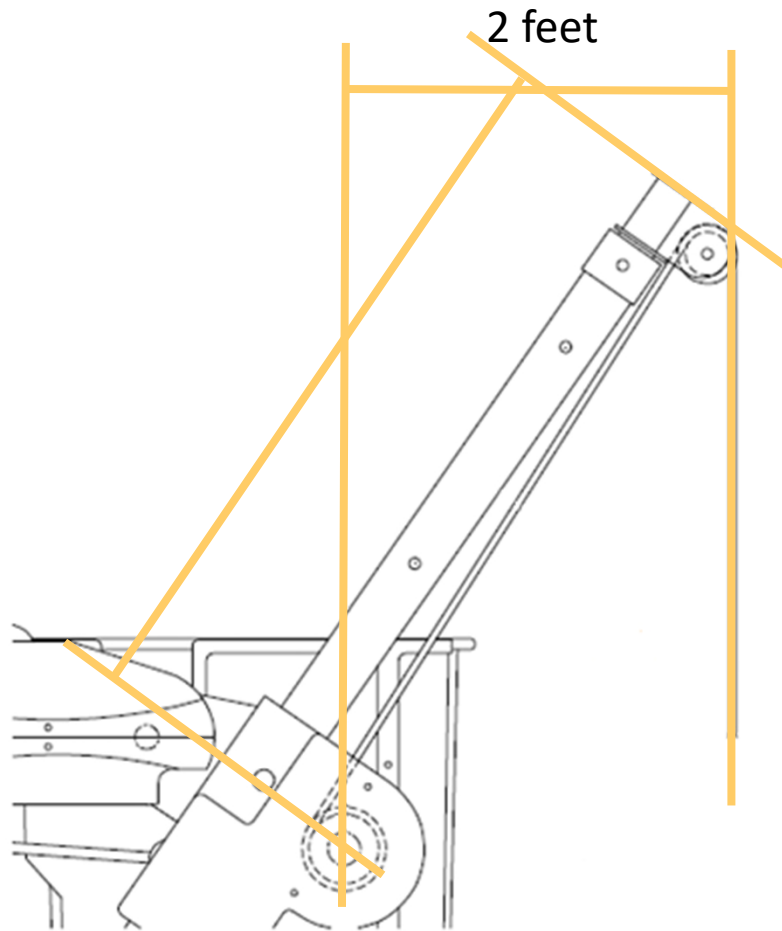
776 lbs

Know your load weight



Measure your load radius

Safe Lifting Practices



Never measure along the jib.

Horizontal measurement only.

When working around energized power lines, use a wooden or fiberglass ruler to measure.



GOT JIB CAPACITY?

LOOK IT UP - BEFORE YOU HOOK IT UP

1

Know your
Load Weight



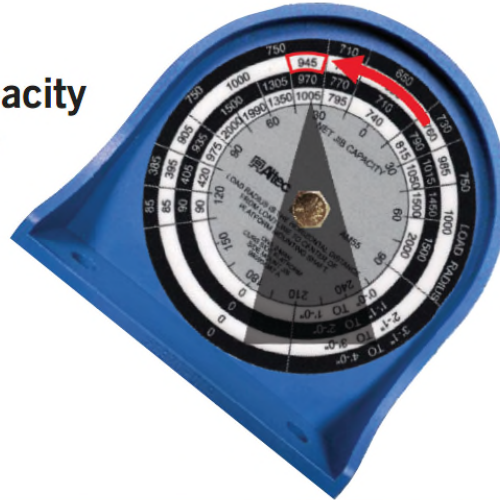
2

Measure your
Load Radius



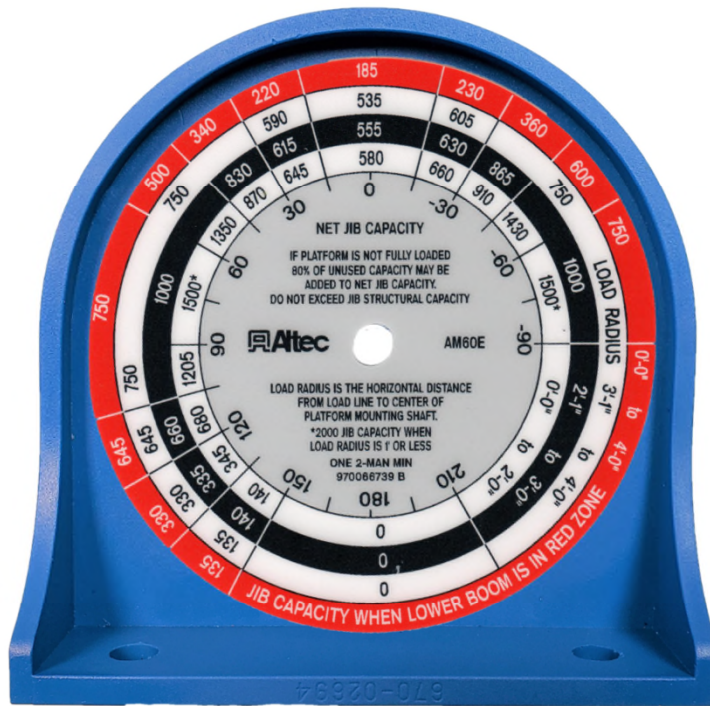
3

Find your **Jib Capacity**
above the Pointer



**LOAD WEIGHT MUST ALWAYS
BE LESS THAN JIB CAPACITY**

Safe Lifting Example



JIB STRUCTURAL CAPACITY	
DO NOT EXCEED NET JIB CAPACITY	
REACH FROM PLATFORM SHAFT	JIB CAPACITY
0 to 1'-0"	2000 LBS
1' 1" to 2'-0"	1500 LBS
2' - 1" to 3' - 0"	1000 LBS
3' - 1" to 4' - 0"	750 LBS
4' - 1" to 5' - 0"	600 LBS

Capacity depends on **upper boom angle** and measured load radius

Capacity depends on **measured load radius**

Check capacity on both charts
Use the smaller capacity

Safe Lifting Practices



Check Net Jib Capacity

Use ring for 2' 6" Load Radius

Look above the pointer

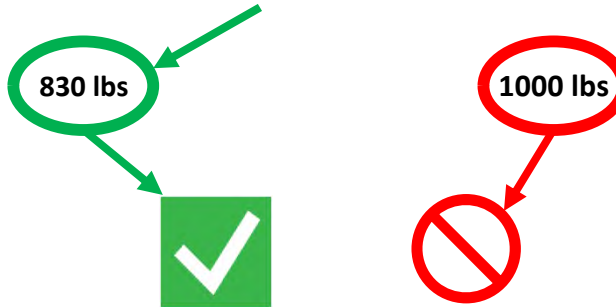
830 lbs

Safe Lifting Practices



Compare both capacities

Use the smaller capacity



JIB STRUCTURAL CAPACITY	
DO NOT EXCEED NET JIB CAPACITY	
REACH FROM PLATFORM SHAFT	JIB CAPACITY
0 to 1'-0"	2000 LBS
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Compare to Load Weight

776 lbs

830 lbs jib capacity can lift 776 lbs load weight

Jib Capacity must always be greater than load weight!

Safe Lifting Practices



- Heavier Load?
 - Go Heavy, Go High
 - Higher Jib Angle
 - Higher Boom Angle
- Plan ahead for capacity
- Winch Up, not Boom Up



Safe Lifting Practices



In this picture no stripes are visible - use the black stripe on chart.



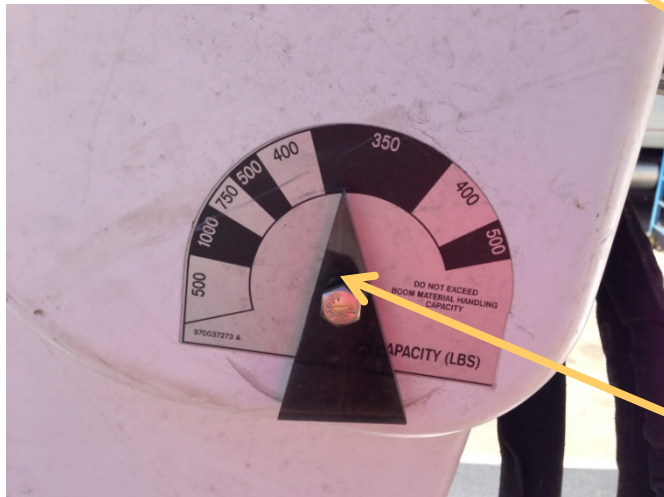
Safe Lifting Practices



In this picture the blue stripe is visible so you would use the blue stripe.



Safe Lifting Practices



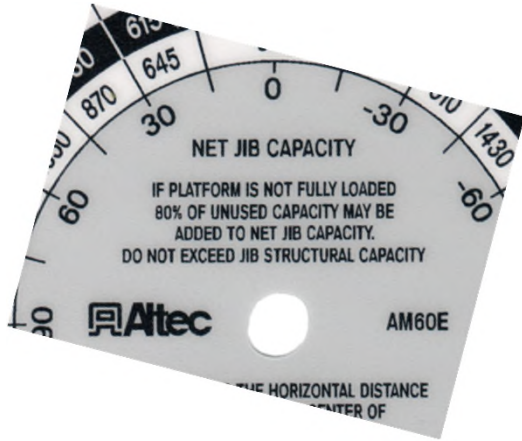
The red stripe is visible on the boom.

This means we'll use the red stripe on the chart.

The indicator points to 300 lb boom capacity.

The indicator for the jib capacity points to 350 lb.

Safe Lifting Practices



Platform Capacity	-	450	lbs
Liner Weight	-	-50	lbs
Personnel	-	-200	lbs
Tools and Materials	-	-75	lbs
<hr/>			
Unused Platform Capacity	-	125	lbs

80 % of Unused Platform Capacity - 100 lbs

Safe Lifting Practices



Add the 80% unused platform capacity to Net Jib Capacity



830 lbs

+ 100 lbs
(80% of unused platform capacity)

930 lbs



1000 lbs

Compare

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DO NOT EXCEED NET JIB CAPACITY	
REACH FROM PLATFORM SHAFT	JIB CAPACITY
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Must Not Exceed Jib Structural Capacity!



ANSI A92.2

4.2 Structural Analysis.

-Loads produced from manual forces applied at the upper periphery of the platform (Minimum value shall be 50 pounds applied horizontally for aerial devices designed to carry one person and 100 pounds applied horizontally for aerial devices designed to carry more than one person.)

- Manually Applied Loads Only
- Single-person platform: 50 pounds
- Two-person platform: 100 pounds

Safe Lifting Summary



- Inspect and maintain the aerial device
- Set up properly
- Know load weights
- Know capacities
 - Jib, hook, rigging, winch and rope
 - Jib accessories, phase holders, insulating links
 - Don't overload, side load or push

Thank You



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