Patriot Lift Company
OSHA Safety Presentation

ON-Lift

Air. Pure and Simple™

World Leader In Globally Patented Air Powered

Landing Gear and Rear Stabilizer Automation

The World's Exclusive Answer to 21st Century Transportation

Air. Pure and Simple™

PRODUCTS

ON-LIFT:

Model 2000

Capable of raising and lowering landing gear in less than 10 seconds.

Capable of lifting up a 60,000# trailer.

48.5 ft/lb torque RPM = 220

Model 2000HD

Capable of lifting up a 100,000# trailer

106 ft/lb torque RPM = 160

ON-LOAD: Rear Trailer Stabilizer

This is the same as On-Lift but the landing gear is placed in the rear of the trailer.

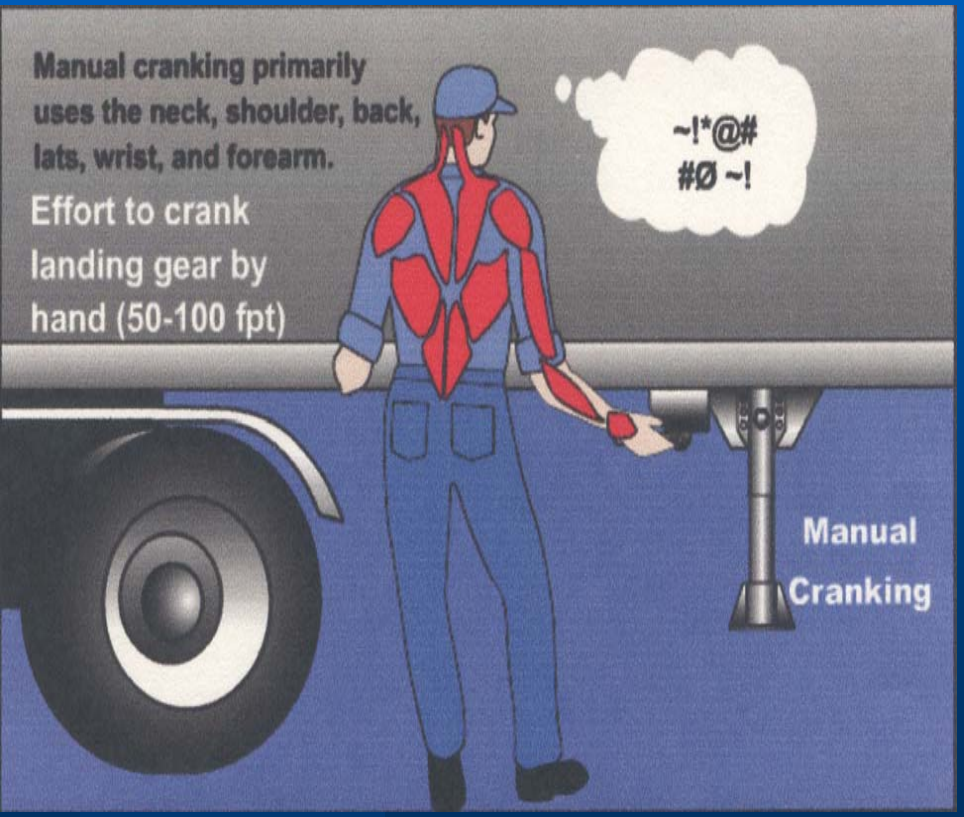
This basically eliminates dock squat, where the trailer drops below the level of the Dock.

This becomes a critical issue for fork lift maneuvering and other operational tasks, especially as many current air suspension systems settle the level of the trailer several inches under the dock after the tractor is shut down.

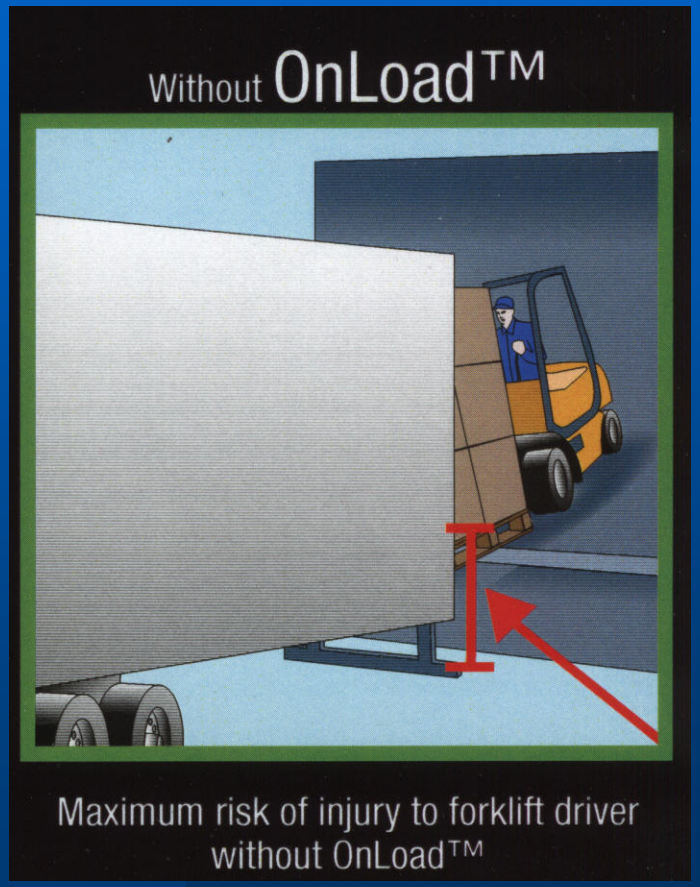
Manual Cranking vs. ON-Lift

Manual

ON-Lift



ON-Load


Without OnLoad™
Maximum risk of injury to forklift driver without OnLoad™


With OnLoad™
With OnLoad™ delployed, rear end of trailer flush with dock allow forklift on and off freely


ON-LIFT
Air. Pure and Simple.

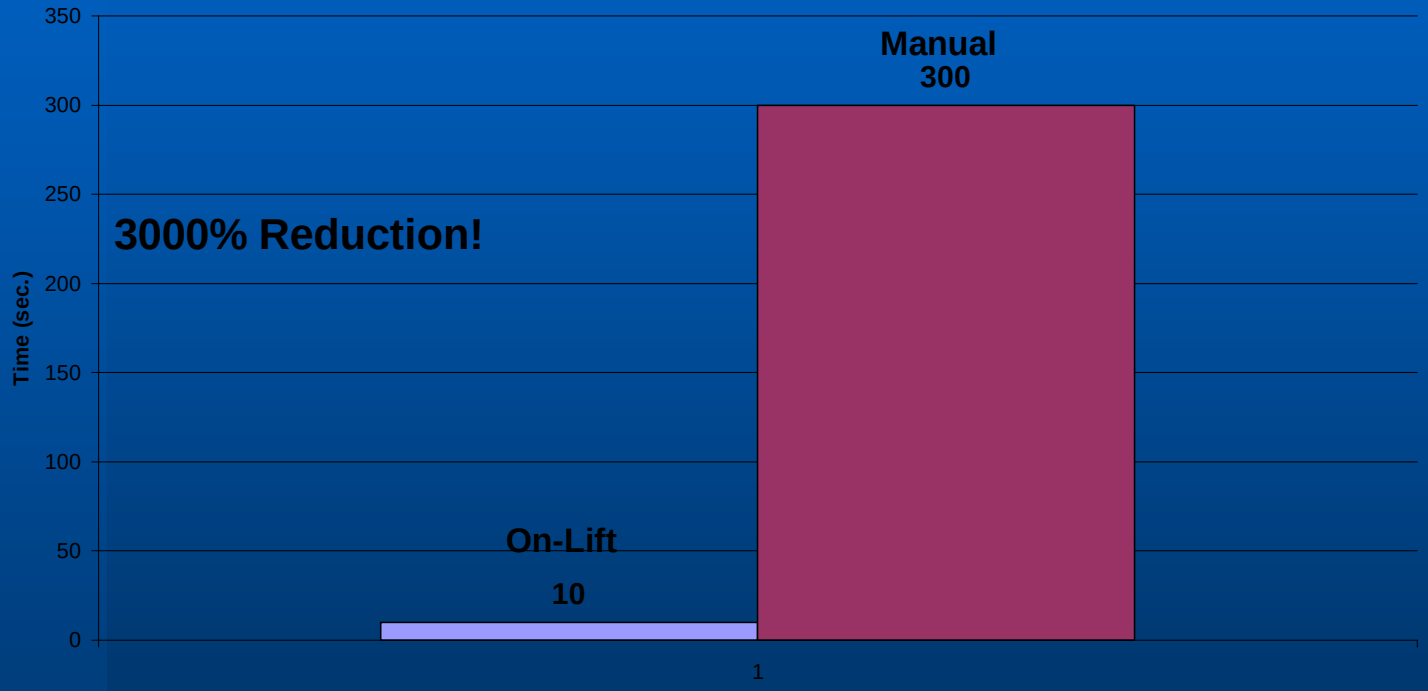

ON-LIFT

PATRIOT LIFT CORPORATE AND MANUFACTURING

ST. CROIX, USVI

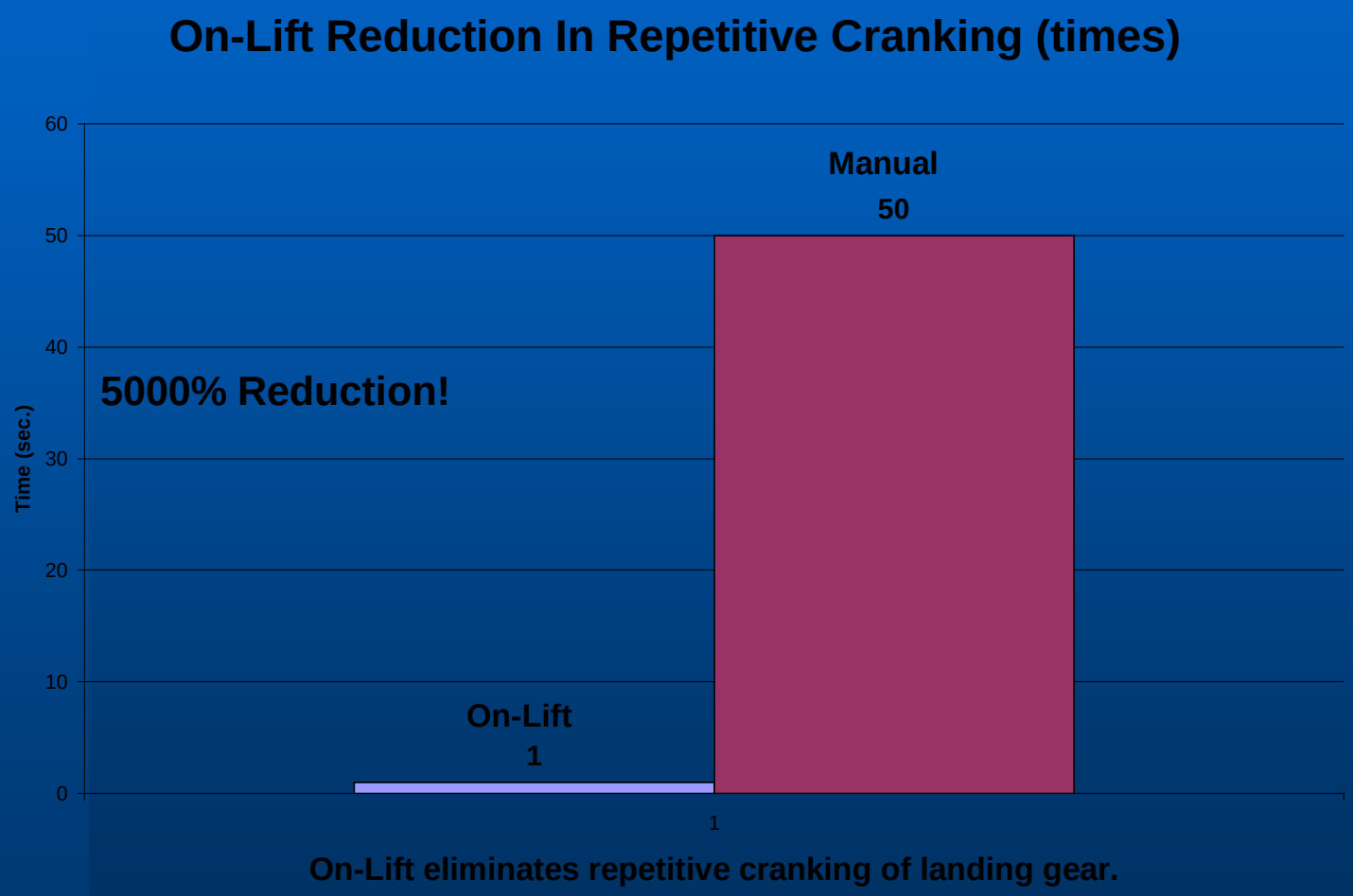
Patriot Lift Product Performance Graphs

On-Lift Reduction In Timing (sec.)



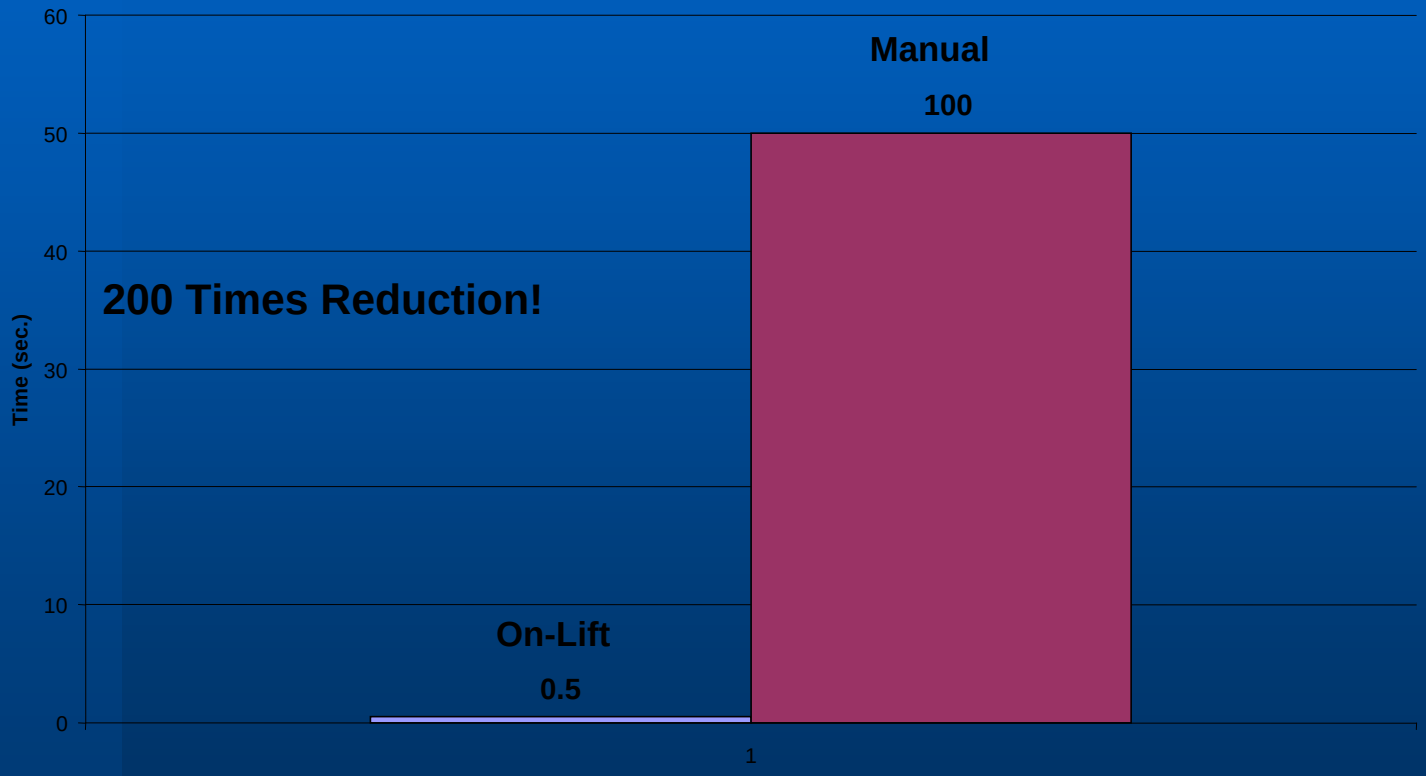
Based on typical time of 10 seconds for a raise/lower cycle in high gear using On-Lift vs. 5 minutes of manual cranking, On-Lift can save 5 minutes or more per use.

Patriot Lift Product Performance Graphs



Patriot Lift Product Performance Graphs

On-Lift Reduction In Max. Manual Effort (ft-lbs)



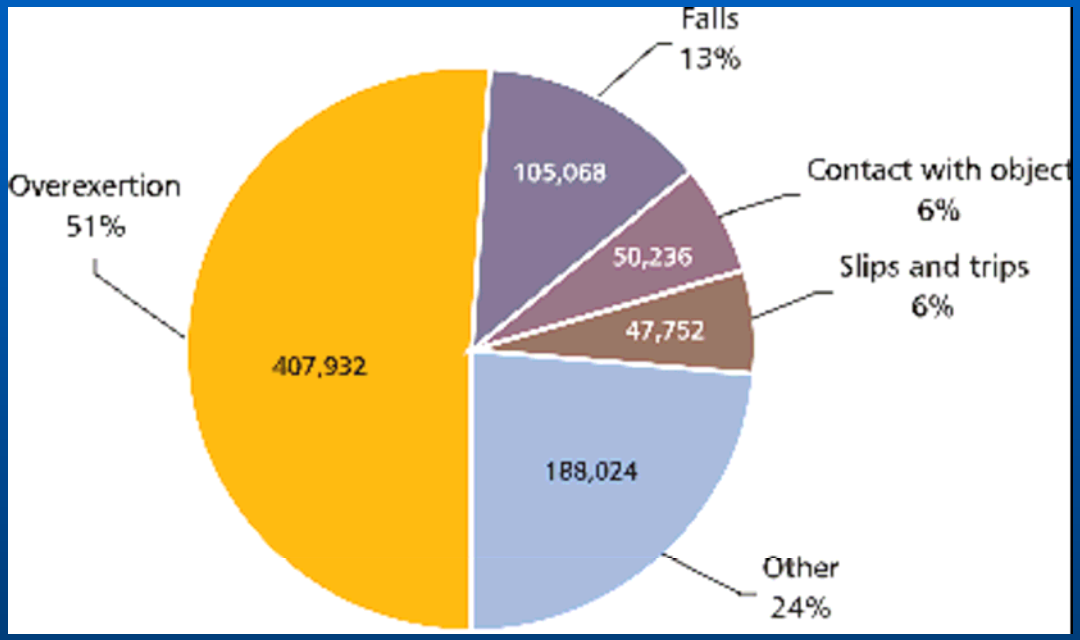
On-Lift eliminates manual effort of cranking landing gear

Landing Gear Automation Safety Deliverables

- Reduces torque drivers are subjected to in to raising or lowering landing gear from 100 ft. lbs. to ½ ft. lbs. (a 200 magnitude reduction.
- Eliminates up to 50 repetitive high torque manual cranks of the landing gear.
- Eliminates manual repetitive cranking in tight locations and awkward positions.
- Eliminates musculoskeletal injuries due to repetitive cranking.
- Eliminates strains due to repetitive cranking.
- Enables all drives regardless of Age, Sex, or Physical Handicap to perform the raising and lowering of the landing gear operation.
- Eliminates serious impact injuries due to crank recoil.
- Virtually eliminates injuries due to Dock Walk/Squat.
- Creates a safe working environment for the operation of raising and lowering of the landing gear.

Injuries In Transport Industry

The following is from OSHA's report in the year 2000 indicating injuries due to repetitive motion while transporting goods:



Many injuries in both small transport to the large transport industries occur while manually cranking the landing gear up and down. This is due to the often awkward positioning of the crank, repetitive motions and/or damaged landing gear.

Injuries In Transport Industry

According to OSHA, MSDs develop as a result of repeated exposure to ergonomic risk factors. Following are some of the major ergonomics risk factors:

- Force (including dynamic motions)
- Repetition
- Awkward or static postures
- Contact stress
- Vibration
- Cold temperatures

Performing forceful exertions may place excessive mechanical loads on the tissues (e.g., muscles, tendons, other tissues) that are used to exert or transfer force from the skeletal system to the work. Heavy loading of tissues causes the body to fatigue more quickly, and increases the amount of time tissues need to recover from the effects of such exertions. Tasks involving prolonged forceful exertions or excessive force alone can result in harm, including muscle strain or tears. However, where other risk factors are present, especially frequent repetition of exertions, awkward postures, or static postures they add to the force required to accomplish the exertion.

OSHA Landing Gear Automation Ergonomics Study

Angus Ranch 11-01-2001

The purpose of this evaluation is to provide an assessment and documentation of the improvements in the Musculoskeletal Disorder (MSD) risk factors associated with the use of a landing gear automation. Findings:

- Forces and Loads are eliminated, removing significant sustained muscle loading.
- Repetition movements affecting back, shoulders, arms, wrists and hands eliminated.
- Awkward Postures eliminated.
- Posture and Body Mechanics greatly improved.
- Maintains neutral and relaxed joint postures.
- Uses appropriate muscle groups.
- Maintains uses of proper grips.
- Minimizes amount and duration of forces.
- Eliminates contact stress on hands and fingers.
- Uses mechanical energy which is more efficient than human energy.

Ergonomic Evaluation
Hamman Angus Ranch

Employee Discomfort Survey: Pre Project

Job Title- Field hand/Driver Number of surveys completed N= **9**

Discomfort Area	Number of employees with discomfort	Percentage of total	Average Rating (0-10 scale)
Neck	6	67%	4.8
Shoulder	9	100%	7.0
Chest	3	33%	5.3
Elbow/forearm	8	89%	6.0
Hand/wrist	9	100%	5.1
Upper back	7	78%	5.1
Lower back	9	100%	6.6
Hip/thigh	7	78%	3.4
Knee	5	56%	3.6
Lower leg	4	44%	3.3
Ankle/foot	4	44%	2.3
			Average Rating= 4.8

Employee Discomfort Survey: Post Project

Job Title- Field hand/Driver Number of surveys completed N= **7**

Discomfort Area	Number of employees with discomfort	Percentage of total	Average Rating (0-10 scale)
Neck	2	29%	3.5
Shoulder	2	29%	3.5
Chest	0	0%	NA
Elbow/forearm	3	43%	5.7
Hand/wrist	3	43%	6.0
Upper back	1	14%	2.0
Lower back	0	0%	NA
Hip/thigh	0	0%	NA
Knee	0	0%	NA
Lower leg	0	0%	NA
Ankle/foot	0	0%	NA
			Average Rating= 4.1

Employee Discomfort Survey Summary

The pre and post project employee discomfort surveys indicate a substantial decrease in the number of areas of reported discomfort and in the severity of discomfort (15% reduction in average over-all rating) after the project improvements were completed. Four employees now report no discomfort whatsoever related to the operation of trailer landing gear following implementation of the improvements. This is a very positive and important measurement of the success of this project.

Fleet Benefits

Patriot Lift Company Pneumatic Landing Gear Automation

1) Potential revenue increase of $1 million per year or greater per 100 trailers.
2) Significant reduction in equipment damage.
   - Landing gear damage is virtually eliminated
   - Significant reduction in 5th wheel damage as well as other trailer components
3) Potential significant reduction in worker's compensation and other insurance costs.
   - Virtually eliminates strains and muscular skeletal injuries caused by repetitive cranking of landing gear with forces up to 100 ft.-lbs.
   - Per OSHA injuries of this type average $17,000 per occurrence
4) Improves employee hiring and retention.
   - Provides a safer work environment for employees.
   - Supports EEO hiring since the operation can be performed regardless of age, sex, race or physical handicap.
   - Reduces incentive costs for recruiting new drivers.
   - Reduces retiring attrition due to physical restriction/handicap.
   - Provides workers with an improved work environment due to physical demand.
   - Improves employee morale - PRICELESS
5) Parking efficiency.
   - Improves the efficiency of parking trailers by 20%.
   - Park 5 trailers in the space originally for 4.

Fleet Benefits

Patriot Lift Company Pneumatic Landing Gear Automation

6) Security enhancement.
   - The potential interface with various GPS tracking systems enables the landing gear to work only with the dispatcher enabler thus virtually eliminating the driver picking up the incorrect trailer.
   - The system also inhibits the theft of the trailer since the landing gear is inoperable without the proper enabler.

7) Virtually no maintenance.
   - The air power is delivered from the Emergency Brake System so that no other auxiliary power is required.
   - The motors have been tested to over 30,000 cycles under load with no failures. That is equivalent to 20 years usage with significant drops and hooks per day.
   - The units will operate well in severe weather conditions at both significant high and low temperatures.

8) Price opportunities.
   - Volume discounts are available.
   - Lease costs are under $8 per week.

9) Tax stimulus incentives.