

# Maintenance & Repair Committee Recommended Practice For Light Theft Avoidance May, 7, 2015

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# Maintenance & Repair Committee

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At the M&R Committee Meeting held May 7, 2015 at Hilton Chicago/Oak Brook Hills Resort in Oak Brook, Illinois the M&R Committee unanimously approved the Recommended Practice for Light Theft Avoidance put forth by the Light Theft Avoidance Task Force.

# Task Force Recommendations

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We have reviewed data from multiple IEPs and from different business sectors that shows significant reduction in all causes of light replacement when using an LED light. Therefore it is our opinion that LED Lights would be the most cost effective, most reliable and most durable light. These test results have proven a minimum of 50% reduction in light replacements.

The Task Force recommends the following based upon our test results and supporting data:

Secured installation of LED lights will:

- Reduce Light Theft
- Reduce Maintenance Costs and
- Improve Driver and Mechanic Productivity

# Task Force Recommendations – Page Two

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Our Findings also support the following:

- All LED lights should be installed with a vibration resistant connection to the wiring harness.
- The installation of LED lights should be done so in a secured manner.
  - The LED lights should either have a method to secure the light plug to the light, or a hard wired light with a secured connection be used to prevent unplugged lights.

# Conclusion

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The Task Force is not recommending nor endorsing a specific light manufacturer or method of securement.

- Each IEP will make the decision as to most cost effective and manageable LED light type for their own respective fleets in their usage environment.

# Appendix One

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- I. Mission Statement
- II. Desired Outcomes
- III. Task Force Goals
- IV. Task Force Members

# Mission Statement

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Light theft on domestic and international chassis has been a problem for many years.

Missing lights result in increased maintenance costs for equipment owners and increased roadability repairs resulting in longer turn times and road side violations.

Conversion to LED lights is a potential solution through reduced operating costs, reduced down time, and reduced road side violations. The issue of theft has prevented fleet operators from upgrading.

# Desired Outcomes

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By identifying root causes and motivations of the light thefts, the task force should be able to propose realistic changes that when implemented will minimize theft occurrence.

Once satisfied that the proposed changes are practical, fleets will adopt them and realizing the theft reduction, gain confidence in upgrading to more expensive but more economical LED lights.

By upgrading to LED's, all parties will see major improvements to the problems outlined under Mission Statement.



# Goals

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- Identify where, when, how thefts are occurring
- Determine primary parties removing lights and their motivation
- Create a measurable field testing plan to prevent light theft
- Propose a cost effective solution to IANA by May 2015

# Task Force Approval

All task members have reviewed and have approved our final recommendation.

Task Force Member	Company	Sector
Dave Green	Consolidated Chassis Management - CCM	IEP
Jeremy Laskos	Norfolk Southern	Rail
Joe Wintercorn	California Multimodal	Motor Carrier
Jordan Hunt	ContainerPort Group	Motor Carrier/ Vendor
Josh Cooley	Illinois Transport	Motor Carrier/ Vendor
Kevin Hardy	Consolidated Chassis Management - CCM	IEP
Randy Call	AIM Transfer & Storage	Motor Carrier
Mike Bowsher	TRAC Intermodal	IEP
Tom Slattery	Flexi-Van Leasing	IEP

# Appendix Two

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- I. Task Force Steps
- II. Test Results
- III. Comparisons

# Task Force Steps

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- Conducted survey of MC community on lights
- Reviewed light options (LED vs incandescent)
- Reviewed securement alternatives
- Reviewed lack of DVIR's
- Collected data from testing by IEPs
- Reviewed Test Results
- Reviewed and Finalized Recommendations

# Test Results

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- Testing concluded 12/31/14
- Test results submitted and reviewed by Task Force members
- Different methods of securement reviewed
- Discovered many LED lights still being replaced due to coming unplugged. Clip for securing pigtails to marker lights developed
- Costs for modifying equipment for different securement methods researched

# Test Results

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- All IEPs report dramatic decreases of light replacements when LED lights are installed in a secure method
- All CCM and CPG chassis with LED lights reported **NO** DVERS for lights after LED lights installed
- UB Anti theft tail light (Hammer in style) much more successful in CPG private fleet than free running pool
- Clip developed for marker lights very successful

# Comparison

	Incan- descent	Flange Mount LED	External Plate LED	Internal Mount LED	Hammer Mount LED
# of chassis	49,224	8,599	976	6,949	138
Marker lights replaced (per chassis/year)	5.9	1.2	1.1	1.1	n/a
Tail lights replaced (per chassis/year)	2.4	.3	.06	.03	1.1
Annual expense	\$4.3 M	\$170 K	\$6 K	\$19 K	\$5 K
Annual expense (per chassis/year)	\$87.14	\$19.46	\$6.04	\$2.73	\$34.72

# Appendix Three

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- I. Supporting Documentation
  - A. Conversion Costs
  - B. Sample Study
  - C. Benefits
  - D. Missing/Broken Light Costs



# Tail Light Conversion Costs (from Grommet Style) Not including the LED light

- Flange Mount
  - \$4 materials, 2 hours labor
- External Plate
  - \$26 materials, 3 hours labor
- Internal Mount
  - \$24 materials, 4 hours labor
- Hammer Mount
  - \$0 materials, 1 hour labor



*Must secure plug against vibration to avoid having to reopen the bolster*

# Sample Study: Chassis with Marker Light Clips

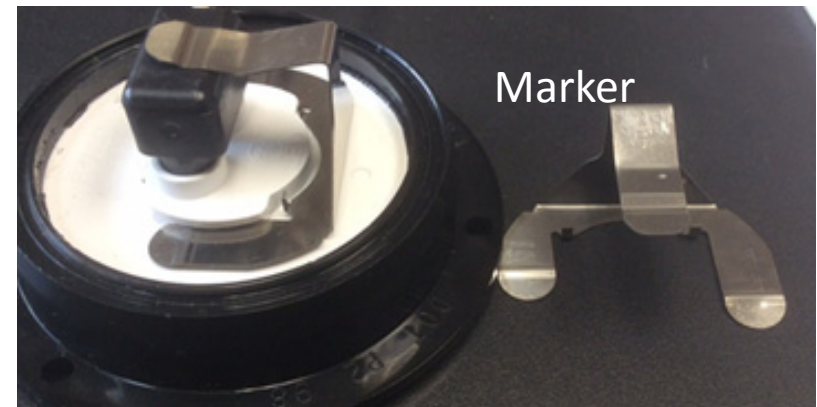
Based on survey findings of unplugged lights, a clip was developed to secure the pigtail to the marker light.

5 Chassis outfitted with test clip

These 5 chassis have made 86 gate moves with multiple MCs since installation

1 chassis has had 3 marker lights replaced for missing.

Other 4 chassis have had ZERO light repairs in 4 months! No tail light repairs either! These chassis are equipped with tail lights with integrated clip as part of the light



# Benefits of Secured LED Lights

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- Less chassis through roadability for light repairs
- Less down time at roadside inspections = **Happier Drivers!**
- Positive impact on CVSA scores
- Less OTR cost
- Less M&R costs for the IEP
- Reduced BO counts and dwell time
- More M&R funds available to make additional future equipment upgrades



# Missing /Broken light costs

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- From 4 IEPs reporting, over **\$13.5M** spent in 2013 on just missing and broken lights
- Over **1,000,000** lights replaced for missing/broken
- Average cost per light is approximately \$13 including parts and labor