

**An Industry Leader Since 1901**  
NOW WITH OFFICES IN EUROPE

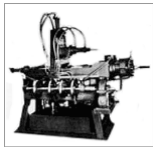
Presented by **CHARLIE TAYLOR**

# HISTORY

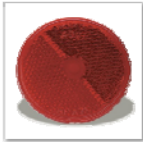
- Founded 1901
- Chemicals
- Plastics
- Optics
- Reflectors
- Heavy Duty



William D. Grote, founder  
Grote Manufacturing, 1901



Injection molding  
machine, 1934

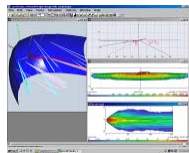


# Company Strengths



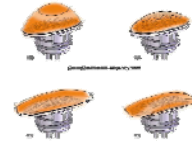
William D. Grote, founder  
Grote Manufacturing, 1902

## Family Owned

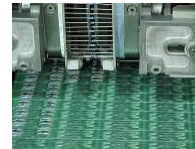


## Engineering

## Heavy Duty Focus



## Design



## Manufacturing



# Company Strengths

- **Facilities in 5 Countries**
  - United States
  - Germany
  - China
  - Mexico
  - Canada ( 2 Facilities )
- **3<sup>rd</sup> Generation Grote as President**





## AGENDA

- **Safety Issues**
- **Incandescent versus LED.**
- **Proper Wiring.**
- **Safer thoughts for today.**
- **LED in the FUTURE**

# SAFETY ISSUES



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# SAFETY ISSUES



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## CONSPICUITY TAPE

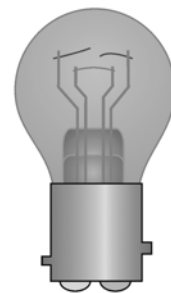


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## INCANDESCENT LAMPS

- Too much power draw
- Over heating
- Warm up time
- Life span
- Corrosion
- Vibration
- Failure



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# INCANDESCENT LAMPS

•Lamps Required--  
draws 18 Amps



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# INCANDESCENT LAMPS

Over heating



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# INCANDESCENT LAMPS

- Corrosion
- Vibration
- Failure



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# WHY LED



Less Power Consumption

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## WHY LED

•Lamps Required--  
draws 2.6 Amps

15.4 less amp draw with LED.



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## WHY LED



Quicker Response Time

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## WHY LED

- LED Lamps are instant on.
- Incandescent lamps require warm up.
- ¼ second quicker response time.
- Which allows 30 to 50 extra feet of stopping distance.



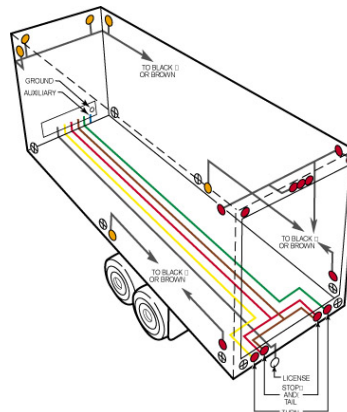
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## TRAILER HARNESS

### Why is Harness Related to Safety

- Wire Gauge is VERY IMPORTANT.
- Be careful of Voltage Drop.



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# TRAILER HARNESS

**DETERMINING WIRE AND CABLE GAUGE SIZE BY CIRCUIT AMPS AND LENGTH**

Total Circuit Amps	Wire Gauge for Length in Feet (Total circuit length)											
	3'	5'	7'	10'	15'	20'	25'	30'	40'	50'	75'	100'
1	18	18	18	18	18	18	18	18	18	18	18	18
3	18	18	18	18	18	18	18	18	18	18	14	14
5	18	18	18	18	18	18	18	18	16	14	12	12
7	18	18	18	18	18	18	16	16	14	14	10	10
10	18	18	18	18	16	16	16	14	12	12	10	10
15	18	18	18	18	14	14	12	12	12	10	8	8
20	16	16	16	16	14	12	10	10	10	10	8	6
24	14	14	14	14	12	12	10	10	10	8	6	6
30	12	12	12	12	10	10	10	10	10	6	4	4
40	10	10	10	10	10	10	8	8	6	6	4	2
50	8	8	8	8	8	8	8	8	6	6	2	2
100	4	4	4	4	4	4	4	4	4	2	1	1/0
150	2	2	2	2	2	2	2	2	2	1	2/0	2/0
200	1/0	1/0	1/0	1/0	1/0	1/0	1/0	1/0	1/0	1/0	4/0	4/0

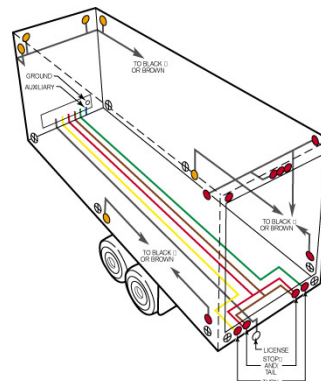
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# TRAILER HARNESS

## Why is Harness Related to Safety

- Dual Main Harness to power Rear trailer.



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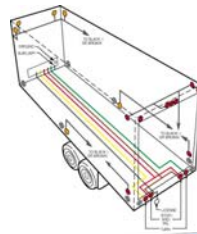
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# TRAILER HARNESS

## Why is Harness Related to Safety

- ABS (Roll Stability) Units Require 9.6 Volts to operate properly.
- If you use the wrong gauge cable, especially fleets that still use Incandescent lamps.

Possible ABS/Roll Stability Failure



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# SAFETY, SAFETY, SAFETY

## SAFER THOUGHTS FOR TODAY

- Add Amber Turn Signals
- High Mount Stop lamps where possible
- Dual Intensity Marker lamps
- Mid Marker Turns

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## LED VS. INCANDESCENT



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## LED VS. INCANDESCENT



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## LED VS. INCANDESCENT



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## LIGHTFORM

- LED PLASTIC SHEET
- 1MM THICK
- 98% LESS MATERIAL
- 100% PERFORMANCE

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The People, The Products and The Programs  
that Give you the Competitive Edge

**THANK YOU**

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