



# USF Operational Excellence Pilot: Reducing Fuel Expenses with Centron Fuel Additive



Adjusted for 2008 Economics

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# CENTRON FUEL ADDITIVE LUBRICATES, CLEANS, AND PROTECTS TRUCK ENGINES

## WHAT IS CENTRON?

- Centron is preventative maintenance & performance a fuel additive intended to increase MPG, reduce emissions plus clean, lubricate, and protect truck engines
- Benefits:
  - 10% -20% increase in MPG
  - Reduced diesel exhaust emissions by up to 50%
  - Increase cetane by up to 8 pts, added horsepower allowing for increased loads
  - Extended engine/fuel system life through lubrication, cleaning, water-removal, reduced maintenance, increased power & performance
  - Act as an algaecide & fuel stabilizer

## HOW IS CENTRON USED?

- Delivered in 55 gallon drums, directly from the manufacturer
- Added to division fuel tanks at time of fuel delivery (Dosage Rate:1 gallon of Centron treats 320 gallons of fuel or 23.4 gallons Centron per 7500 gallons diesel )

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## DIRECT AND INDIRECT COSTS CAN BE DISCOURAGING AT FIRST...

Ft Mill data

### Direct Centron cost

- Adds \$0.10 per treated gallon of fuel (= 2% increase in fuel expense)
- 23.4 gallons of Centron added to every 7500 gallons of diesel
- Independent from fuel prices

-\$9,240 / mo.

### Temporary Increase in fuel filter replacement

- "3 months of pain" as fuel system is cleaned out, resulting in increased fuel filter replacement
- Actual Ft Mill fuel filter costs used, along with estimated shop labor expenses (\$27/hr labor, 15 minutes to replace a filter)

-\$200 / mo.

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**Initial Total Cost**

**-\$9,440 / mo.**

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**...BUT THERE ARE OPPORTUNITIES FOR SAVINGS**

**Centron impact on fuel efficiency**

**\$ ?????**

**Reduced maintenance**

**\$ ?????**

**Increased fleet asset life**

**\$ ?????**

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**Total Savings**

**\$ ?????**

**Total Direct Cost**

**-\$9,440 / mo.**

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**IS CENTRON  
COST-  
EFFECTIVE?**

## A 1.8% INCREASE IN MPG\* WILL COMPLETELY PAY FOR CENTRON...

Variable	Value	Ft Mill data
<b>Direct Cost of Centron</b>	<b>\$9,440 per month</b>	
Cost of Fuel	\$4.65 per gallon	
Gallons of Fuel used	108,000 gallons per month	
<b>increase in MPG of 1.8% = Cost savings of **</b>	<b>\$9,440 per month</b>	

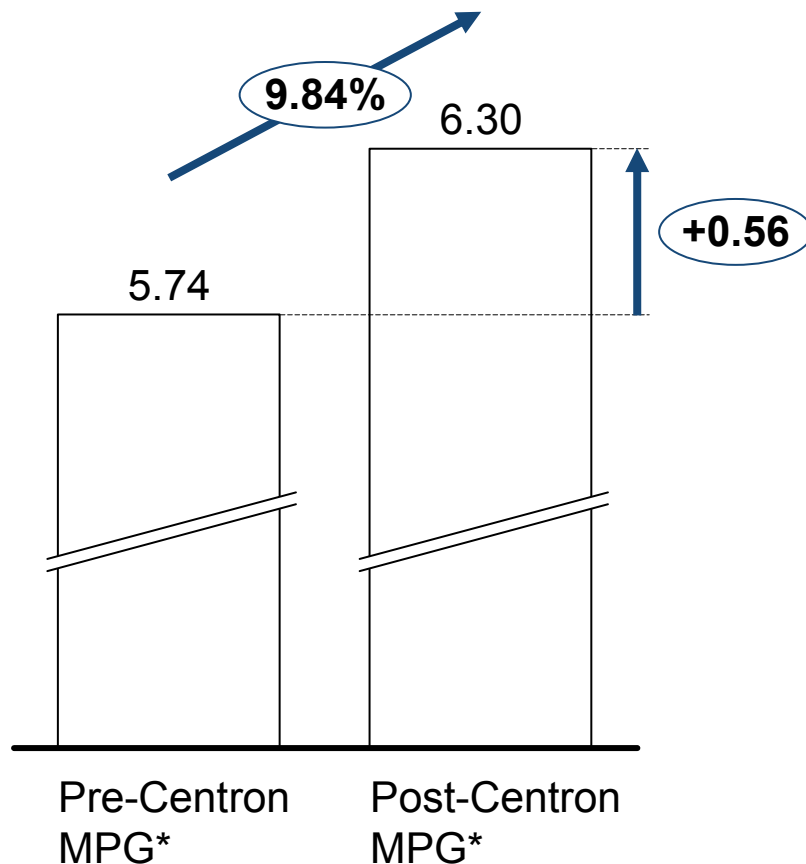
\* Miles Per Gallon, measure of fuel efficiency

\*\* Assumes constant miles



## ACTUAL MPG HAS IMPROVED AT FORT MILL...

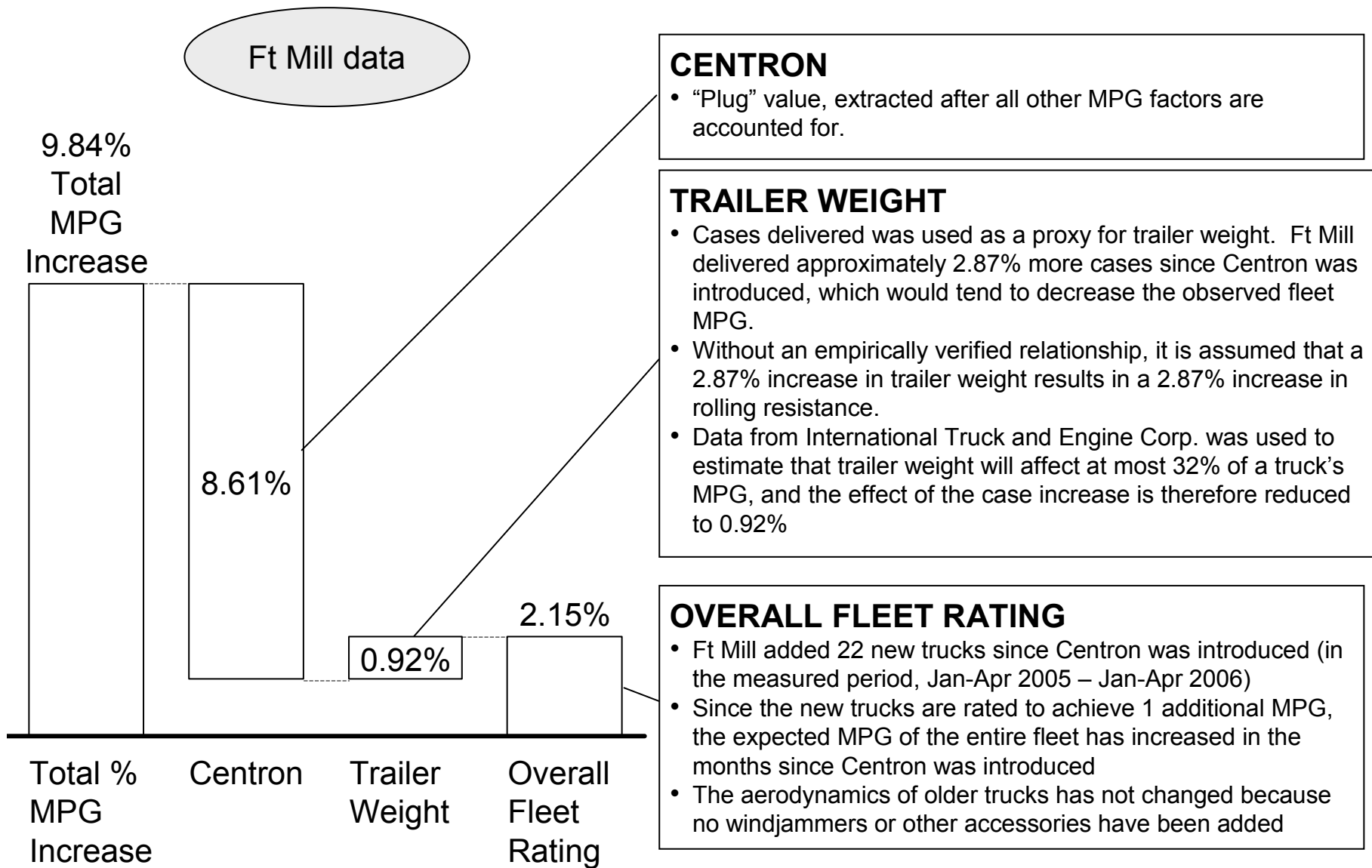
## ...BUT IS DRIVEN BY SEVERAL FACTORS



- Overall Fleet MPG Rating
  - Aerodynamics
  - New Truck ratings
- Centron
- Trailer weight
  - Affects rolling resistance

\* Reliable Pre-Centron MPG data only available for January – April. Comparison made between same year to year period to negate seasonal effects on MPG

# THE MPG INCREASE CAN BE EXPLAINED BY THREE MAIN FACTORS



## CENTRON'S EFFECT ON MPG COMPLETELY PAYS FOR THE ADDITIVE...

Variable	Value	Ft Mill data
Direct Cost of Centron	\$9,440 per month	
Cost of Fuel	\$4.65 per gallon	
Gallons of Fuel Used	108,000 gallons per month	
Reduction in Fuel Usage due to Centron	8.61% fewer gallons per month	
<b>Cost savings from Centron's effect on MPG*</b>	<b>\$43,239 per month</b>	

**Net Savings due to MPG increase alone**

**\$33,799 / mo.**

\* Assumes constant miles



## CENTRON HAS ALSO REDUCED OTHER COSTS...

### Estimate of reduced maintenance

- 40% fewer fuel-system-related road calls (\$75/call)
- 66% fewer fuel-system-related outside vendor repairs (\$150/repair)
- 25% fewer fuel filters used (parts cost plus shop labor)

Note: Rough estimates based on interviews with Ft Mill Shop Manager Mike Dixon

**\$382 / mo.**

### Estimate of increased fleet asset life

- Estimated 20% increase in average truck life (from 8-10 yrs to 10-12 yrs)
- Replacement cost of fleet spread out over longer period (\$49,000 truck cost over 11 yrs average extended lifespan, minus cost spread out over 9 yrs previous average lifespan))

**\$8,235 / mo.**

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## ...LEADING TO SIGNIFICANT POTENTIAL NET SAVINGS

Ft Mill data

**Centron impact on fuel efficiency**

**\$43,239 / mo.**

**Reduced maintenance**

**\$382 / mo.**

**Increased fleet asset life**

**\$8,235 / mo.**

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**Total Savings**

**\$51,856 / mo.**

**Total Direct Cost**

**-\$9,440 / mo.**

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**Net Savings due to Centron  
ROI**

**\$42,416 / mo.  
550%**



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## NEXT STEPS:

- Identify divisions where Centron could be implemented (on-site fuel storage), no current fuel additives
- Explore impact of external fleet maintenance services, logistical difficulties in adding Centron to fuel tanks
- Share findings with other divisions
- Explore Environmental Initiative to reduce toxic exhaust emissions using Centron

## APPENDIX – CALCULATION DETAILS

Item	Calculation Details*
Centron direct cost	Actual Ft Mill monthly Centron cost, verified based on 108,000 gallons of fuel used per month, with \$0.10 distributed cost of Centron per treated gallon
Increased fuel filter cost	Actual increased Ft Mill fuel filter costs, based on “Parts Query” from shop
Centron Impact on Fuel Efficiency	Backed-out from MPG, after accounting for effect of cases and fleet MPG.
MPG	Data from Ft Mill corporate reports, 2005-2006. Reliable Pre-Centron MPG data only available for Jan-Apr 2005. Assumed that MPG was impacted only by trailer weight, fleet MPG rating, and Centron
Cases (weight)	Used cases as a proxy for weight. Case data taken from 2005-2006 corporate reports. Compared Jan-Apr 2005 to Jan-Apr 2006
Fleet MPG rating	Based on estimates from Ft Mill Transportation manager and Fleet maintenance manager on the expected MPG for old and new trucks. (5.5 MPG old trucks, 6.5 MPG new trucks), 22 of 186 trucks are new.
Reduced maintenance	Based on estimates from Ft Mill Fleet maintenance manager. Reduced fuel-system-related road calls, reduced outside vendor repairs, reduced fuel filter usage after “6 months of pain”
Increased Asset life	Based on estimated from Ft Mill Fleet maintenance manager. Estimated 2 yr (20%) increase in fleet life, with replacement cost allocated over the life of truck.