

California Energy Commission's Fuel Efficient Tire Program

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**Energy Efficient Tire
Workshop**

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Presentation Outline

- **Tire Study**
 - **Approach**
 - **Milestones Completed**
 - **Milestones Remaining**

- **Rulemaking for Reporting Requirements**
 - **Planned Activities**
 - **Some Issues**
 - **Timeline**



CEC's Current Tire Study

- Awarded to Smithers Scientific
- \$400 CIWMB (Ca. Integrated Waste Mgt Board) funding
- Basis for regulation rulemaking
- Final report expected December 2006.



Detailed Objectives of the Tire Study

- Select RR (rolling resistance) test
- Study fuel economy vs wear, safety, recycling, cost
- Investigate effect of under-inflation
- Discover RR distribution for specific tire sizes



Team / Consensus Effort

- CIWMB
- Smithers
Scientific with
Sub STL
- RMA and NRDC
input
- Coordinated
efforts with NAS
Panel Tire Study



Tire Study Approach

- 1. Select SAE rolling resistance test**
- 2. Select and test large pool of tire models**
- 3. Compare low and high RR tires for:
Safety, longevity, recycling, cost, wear
when under-inflated**



Tire Study Milestones Completed: Selecting the Rolling Resistance Test Type:

SAE J1269:

Single speed, older test, common usage

SAE J2452:

Multiple speed, more: complex, costly and complete data but hard to compare



Test Comparison Method

- Selected 10 different tire models
- Procured 20 tires of each model
- Tested 10 tires of each type on J1269
- Tested 10 tires of each type on J2452



J1269 and J2452 Test type comparison results

- Good Correlation— $R^2 > .99$
- Fuel economy rating similar for both tests
- J1269 broadly used
- J2452 more detailed information



Tire Testing Contract Results: Repeatability of Rolling resistance measurements

- 10 tires each test

Results showed:

- Fairly good repeatability
- Although some tire types/models better than others
- All tires tested had a measurably repeatable RR characteristic



Milestones Remaining: Select and Test Group of High and low RR tires

- OEM type tires
- Suspected high RR tires
- Diverse types, models, UTQGS ratings
- Comparative tires used for later tasks of longevity and safety
- Estimated total about 110-150 depending on costs



Tire sizes to be tested

- 4 vehicle classes tentatively selected
 - most popular vehicles based on DMV database from each class chosen
- Compact car, full size car, sport utility and pick up truck



Milestones Remaining: Investigate Low Rolling Resistance in Tires vs Wear

- Do low rolling resistance tires wear out faster than other tire types?
Or.....
- Do tires that have good wear characteristics have higher rolling resistance?



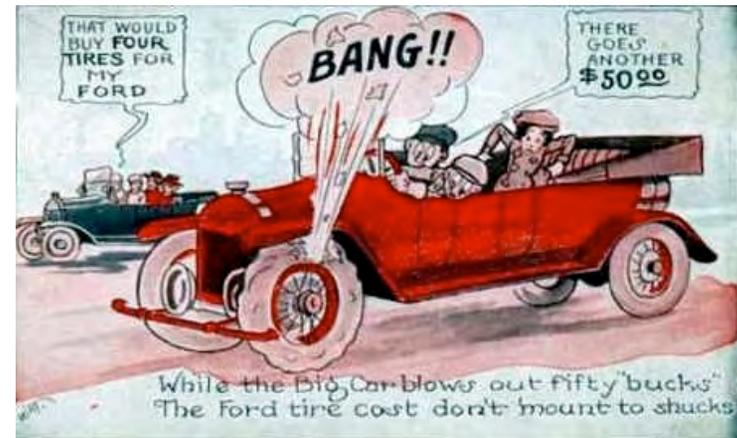
Milestones Remaining: Investigate Low Rolling Resistance in Tires vs Safety

- Are tire characteristics relating to safety such as wet traction, stopping distance, etc., inversely related to rolling resistance?



Milestone Remaining: Investigate Low Rolling Resistance In Tires vs Recycling, Cost

- Are low rolling resistance tires in any way, different from other tires regarding their recycle-ability?
- Are low rolling resistance tires more costly?



Milestone Remaining: Investigate Low Rolling Resistance In Tires vs Under-inflation

- Do under-inflated, low rolling resistance tires wear out faster than other under-inflated tires?



Tire Testing Activities Timetable

September 2005	Report on SAE RR test types
November 2005	Select tires to test for RR
February 2005	RR testing complete
March 2005	Plan for wear and safety testing



Tire Testing Activities Timetable (cont'd)

July 2006	Tire recycling report
August 2006	Safety test results
October 2006	Wear test results
December 2006	Final report conclusions



Some Issues for Reporting Requirements

- RR vs tire sizes for each tire model
- Repeatability of RR
- Testing equipment standardization
- Self reporting / testing—accuracy?
- Self rating--understated like UTQGS?
- Does RR improve or decline with wear?
- Where to set rating ranges



AB 844 Activity Timeline to Start Rulemaking for Reporting Requirements

- 4/05 Tire Study contract in place
- 11/05 Form CEC rulemaking committee
- 12/05-2/07 Input from stakeholders and industry
- -12/06 Completion of Tire Study contract activities
- 2/07 Begin formal rulemaking



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