



# Commercial Vehicle Safety Alliance

## Operation Air Brake

Transportation Research Board  
Truck & Bus Safety Committee  
January 13, 2009

Steve Keppler  
Director of Policy & Programs



## Operation Air Brake

- **Purpose**
  - Operation Air Brake is an ongoing effort of an international truck and bus brake safety campaign dedicated to improving commercial vehicle brake safety throughout North America.
- **Objective**
  - Reduce the number of highway crashes caused by faulty braking systems on commercial vehicles by conducting roadside inspections and educating drivers, mechanics and others on the importance of proper brake inspection, maintenance and operation.



3

## Operation Air Brake

### *What is it?*

- An International Selective Traffic Enforcement Program designed to.....
  - Promote and reinforce the need for drivers and mechanics to inspect, check and adjust air-brake systems.
  - Educate drivers on the seriousness of operating a heavy vehicle with inadequate brakes.
- Participants
  - Enforcement Agencies across Canada and the United States, Traffic Safety Agencies, Industry, Stakeholders/Associations
  - FMCSA, CCMTA and Transport Canada



### Operation Air Brake

#### *Why are we doing it?*

- 2006 Large Truck Crash Causation Study.
  - Brakes were a factor in 29.4% of all the crashes investigated.
- NTSB crash investigations.
  - Many brake operation, inspection and/or maintenance issues contributed to the crashes.
- Out of Service Violations cited during roadside inspections.
  - 52.5% of OOSV in Roadcheck 2008, followed by lights — 11.7%, safe loading — 10.4%, and tires/wheels — 9.5%.
- Operation Air Brake enforcement data.
  - Of the nearly 2.2 million brakes inspected, 17.1% of vehicles inspected are placed out of service for brake-related defects.



### Operation Air Brake

#### *Why are we doing it?*

- Braking systems on commercial vehicles are complicated.
  - In need of constant inspection and attention to ensure proper operation and performance.
- Drivers and mechanics are in need of more education and awareness of how braking systems operate and how to inspect and maintain them.
- Driver Surveys
  - Of the 4,055 drivers surveyed during 2003 OAB, only 15 (0.37%) provided correct responses to all the questions regarding brake adjustment.



## Operation Air Brake

### *Why are we doing it?*

- People respond to different approaches to altering behavior. Safety encompasses education, enforcement and engineering. Operation Air Brake is focused principally on two of these elements — enforcement and education.
- We have made a concerted effort in recent years to more actively engage the brake manufacturers and engineers.
  - HDBMC
  - SAE



7

## Operation Air Brake

### *Campaign Focus*

- Three components
  - Enforcement
    - Strict enforcement of brake rules essential
    - Brake check days
  - Promotional Items
    - Brake Checker - Key Chain
    - Decals
    - Pamphlets/Brochures
    - Brake Adjustment Indicators
  - Awareness Activities
    - Roadchecks
    - Truck Stops
    - Truck rodeos
    - Carrier awareness
    - Driver/carrier meetings
    - Driver appreciation days
    - Scale/VMS signs
    - PSAs
    - News releases
    - Radio and TV interviews
    - Supplier involvement



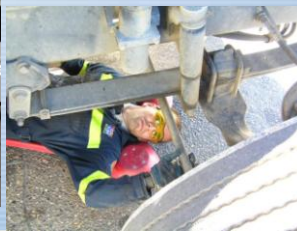
## Brake Safety Week

- What is it?
  - Brake Safety Week is part of the Operation Air Brake Campaign
  - CVSA Member Agencies, industry and other stakeholders
    - Various activities
    - Announced to the public
  - Enforcement
    - Brake-only inspections
  - Education
    - Literature, Seminars, Inspection demonstrations
- When is it?
  - A week-long event held in August/September each year
- Purpose
  - Focus is to increase knowledge, regulatory compliance and performance of commercial vehicle braking systems.



9

## Activities



10

## Educational Materials



11

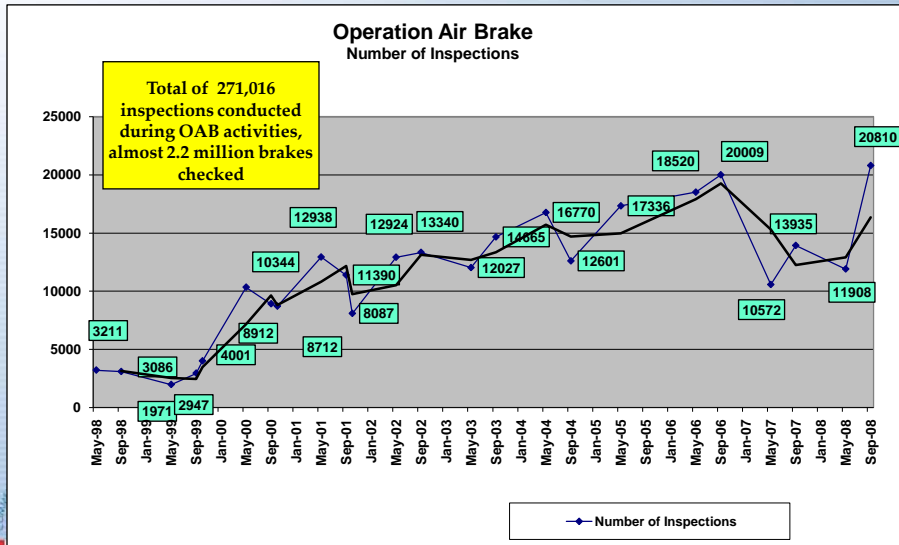
## A Look at Some Program Metrics

- Began in 1998 in Canada.
- Several brake check days throughout the year.
  - Unannounced and Announced
- Driver Survey in 2003
- Technician Survey in 2008
- Brake Safety Symposia in 2000 and 2006
  - One planned for December 2009
- Brake Safety Week
  - Initiated in 2005
- 2,191,366 brakes checked since inception.
  - 271,016 vehicle inspections
- Over 400,000 pieces of brake educational materials distributed over the event's lifetime.
- Effectiveness Study

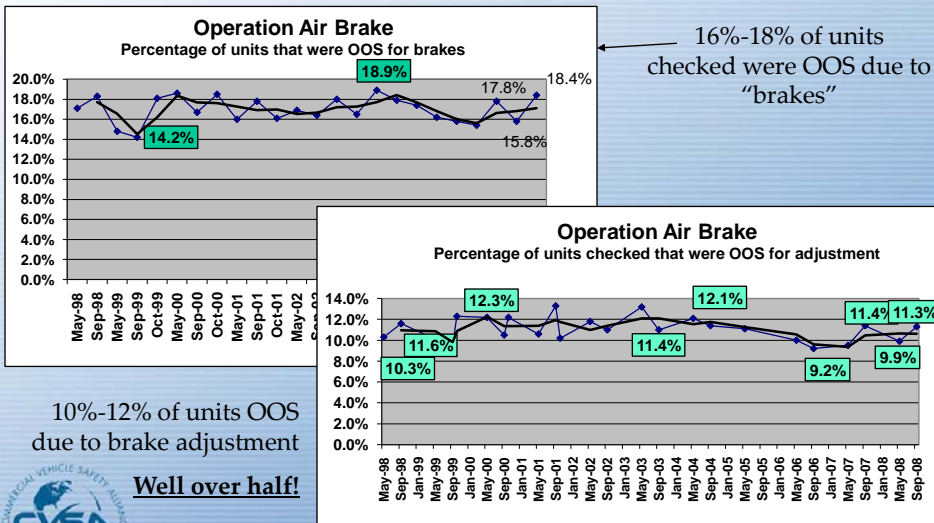


12

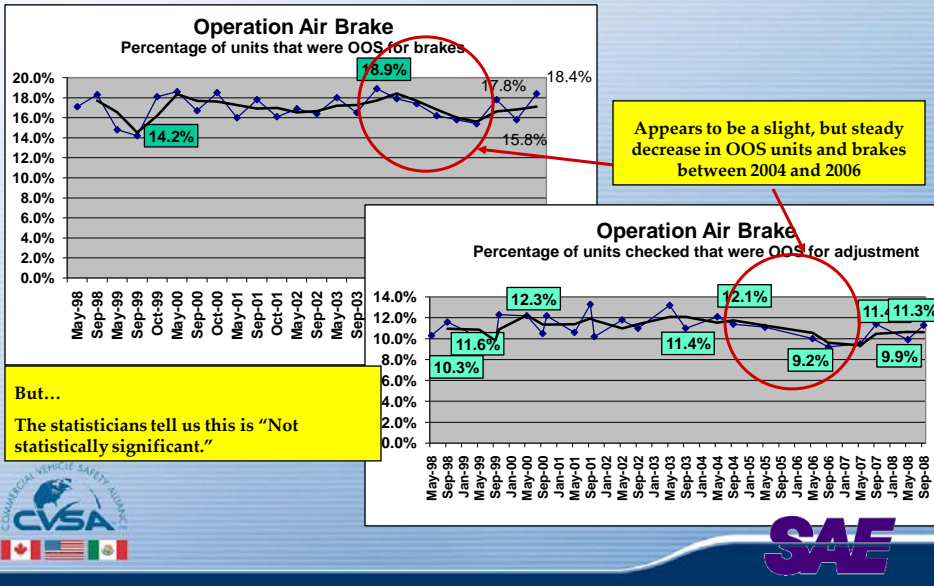
## More and More Inspections are being Done



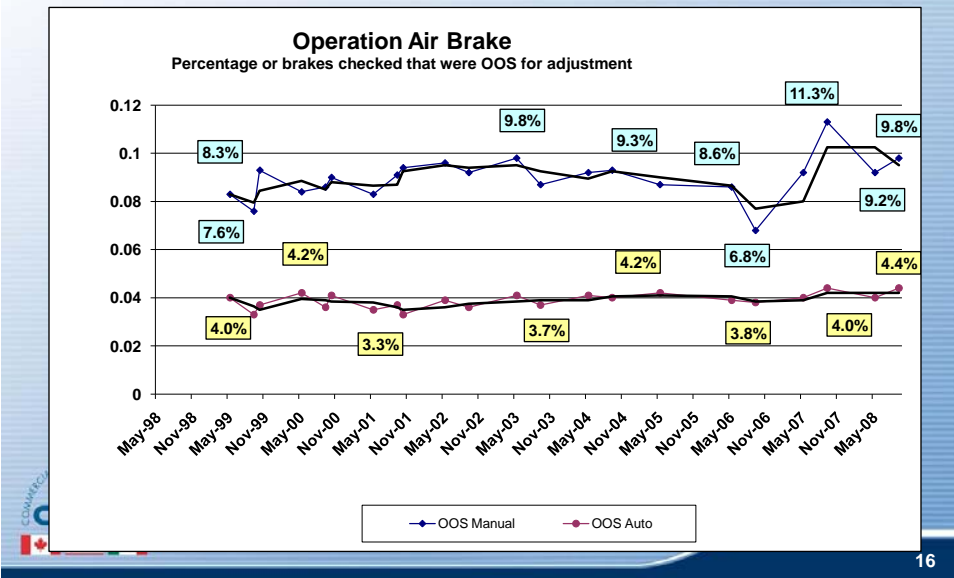
## OAB Summary - 1998-2008: Brakes



## OAB Summary - A trend?



## Historical Data on Adjustment OOS





## Announced vs. Unannounced Events

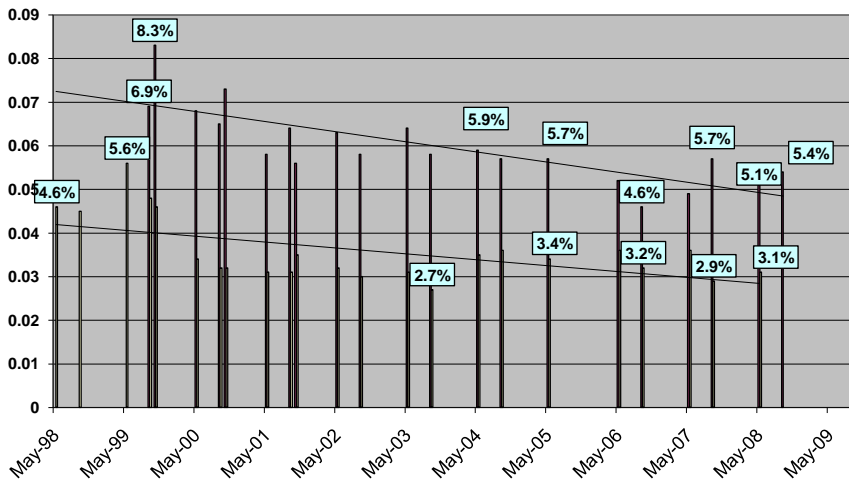
*Do we see a difference in the data?*

<b>Total Announced</b>	121695	13378	9932	20842	244565	700603	972534	21449	27568	49017
		10.99%	8.16%	17.13%				8.77%	3.93%	5.04%
<b>Total Unannounced</b>	149321	16642	11576	25493	312968	876372	1218832	28010	34168	62178
		11.15%	7.75%	17.07%				8.95%	3.90%	5.10%
<b>Totals</b>	271016	30020	21508	46335	557533	1576975	2191366	49459	61736	111195
		11.08%	7.94%	17.10%				8.87%	3.91%	5.07%

No!



**Operation Air Brake**  
Canada vs. United States -- percentage of brakes checked that were OOS for adjustment



## Canada appears to have better compliance

### *Why the difference?*

- Specificity of regulations
  - Canadian jurisdictions identify any brake with stroke beyond the adjustment limit as a safety defect
  - US only clear in FMCSR 396 Appendix G
    - Applies only to periodic annual inspection
    - Otherwise US jurisdictions refer to CVSA OOS, which “allows” 20% defects
- Possible approach to education
  - Past OABs have targeted more educational events in Canada
- PMVI Standard and Pre-trip inspection requirements in Canada
- Possible better publicity/severity of enforcement penalties
- More market penetration/use of brake stroke indicators/ monitoring systems



## OAB Effectiveness Study

- Focus of this effort
  - CVSA has been tracking brake inspections for 10 years through the OAB program.
  - Are we making progress?
  - If not, how can we better get the message out?
  - If we can't tell if we're making progress, how might we do things differently so that we can measure the program effectiveness?
- Funded through FMCSA Grant

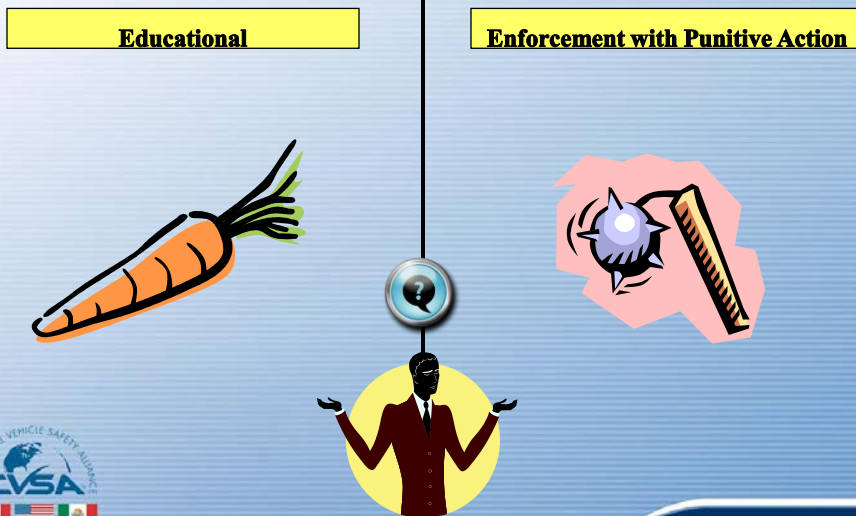


## Important Message Points

- Air Brakes become less effective when beyond the adjustment limit.
  - Brake force can go to zero for excessive stroke.
- Under normal driving conditions, drivers cannot feel when their brakes are out of adjustment.
  - In high demand braking situation (i.e. panic stop), inadequate available brake force can have serious consequences.
- If an automatic brake adjuster is beyond the adjustment limit, don't just "tighten it up" and think the problem is solved.
  - Something made it go out of adjustment. There is a need to diagnose and fix the real problem.



## Approaches



## Knowledge: Driver vs. Fleet

- 2003 Survey
  - Given to drivers during brake blitzes and other enforcement activities
  - Focused on knowledge of air brake system
  - 4,055 responses
- 2008 Survey
  - Given to fleets via Internet CVSA/Survey Monkey
    - CVSA Associate Members
    - TMC Members
  - Focused on practices with some knowledge questions
  - 264 Responses



## Results of surveys

- Drivers were lacking in knowledge in 2003
- Fleet respondents seemed better informed, though still some questionable practices exist
  - 38% regularly adjusted automatic brake adjusters
  - Half did not feel adjusting automatic brake adjusters was a dangerous practice
  - 60 percent were not aware of any manufacturer warnings against such practice
- Fleet managers and drivers were interviewed at 2008 NAIC
  - Most remembered and prefer the educational approach
  - These were likely a sampling skewed towards the “better informed” population

Detailed results in upcoming report



## Recommendations on Approach

- Continue to combine the education and enforcement approaches
- Educational/Outreach
  - Create a simple visual/physical display that tells the message
    - People likely to better get the picture and are more likely to respond if the demonstration of reduced brake force when OOS is shown using real components
  - Bring education to the fleets
    - Can't always depend on targeted people to visit displays at events
    - Need fleet managers/safety managers as much as drivers, if not more
  - Make Outreach activities “profitable” or entertaining for visitors
- Enforcement
  - Continue to hold announced and unannounced brake blitzes
    - Needed for Data collection statistics
    - Opportunity to give every driver educational brake materials



## Outreach Recommendations

- Hold education events with giveaways
  - Truck stops
  - Inspection facilities
  - At fleet facilities
  - In conjunction with association gatherings
    - Trucking (ATA, CTA, OIDA, State and Provincial Trucking Associations, etc.)
    - Maintenance (TMC, etc.)
- Advertising
  - Satellite Radio
  - Podcasts
  - Trucking Newspapers
    - Transport Topics, The Trucker, Commercial Carrier Journal
  - Free trucking magazines offered at gas stations/truck stops




## Monitoring Future OAB Effectiveness

- Target INTRASTATE fleets, if possible, to obtain a “closed system”
  - Monitor through regular OAB activities.
- Identify “lower tier” fleets (through MCMIS) and bring air brake education to them.
  - Continue to monitor inspection results of these fleets through MCMIS, after educational visit
- Repeat 2003 Driver Survey



## Thanks!!!

- Steve Keppler
  - [stevek@cvsa.org](mailto:stevek@cvsa.org)
  - [www.cvsa.org](http://www.cvsa.org)
  - (202) 775-1623
- Upcoming events 
- Cooperative Hazardous Materials Enforcement Development
  - January 25-29, 2009
- Bus Safety Summit
  - March 5-6, 2009 (Crystal City, VA)
- CVSA Spring Workshop
  - April 4-7, 2009 (Louisville, KY)
- Roadcheck
  - June 2-4, 2009
- Operation Air Brake
  - Unannounced Brake Check Days
  - Brake Safety Week
  - Brake Safety Symposium (December, 2009)
- Operation Safe Driver
  - Fall 2009
- North American Inspectors Championship
  - August 17-23, 2009 (Pittsburgh, PA)

