House Bill 1551
Overload and Overweight Vehicle Study Conducted by the Virginia Transportation Research Council

November 19, 2008 CTB Workshop

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HB 1551 Mandate

Calls for review of current fee structure for overload and overweight vehicles

- To be conducted by VDOT, in consultation with DMV, and industry representatives
- To determine what, if any, additional fees should be associated with damage and additional maintenance costs

VDOT Commissioner shall recommend legislation regarding the fee structure by December 1, 2008

Overweight Permits Issued FY08

Type	Number Issued	Permit Revenue	Avg.
Single Trip	75,500	$1,647,000	$22
Blanket	6,273	975,000	$155
Tank Wagons[a]	53	42,400	$800
Hydroexcavators	12	1,580	$132
Exempt	10,551	0	0
Coal haul[b]	750	0	0
Total	**93,099**	**$2,665,900**	

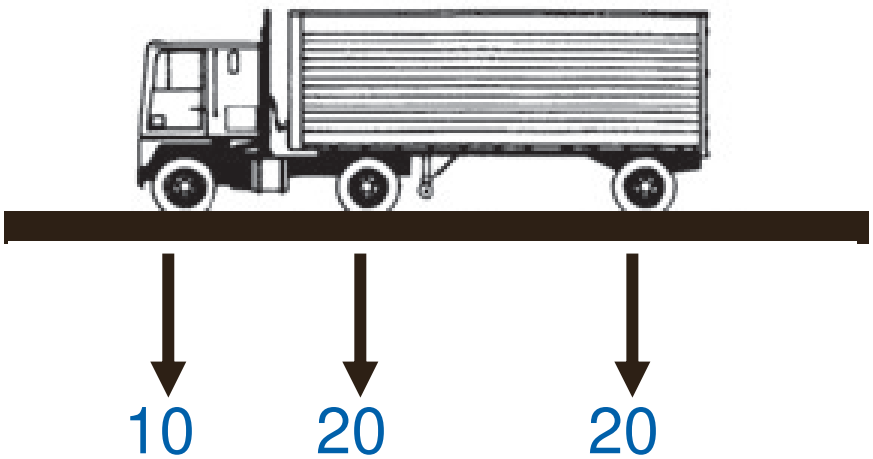
[a] Current fee is $265 for tank wagons based on previous work done by the Research Council

[b] No permit fees charged; pay coal severance tax instead

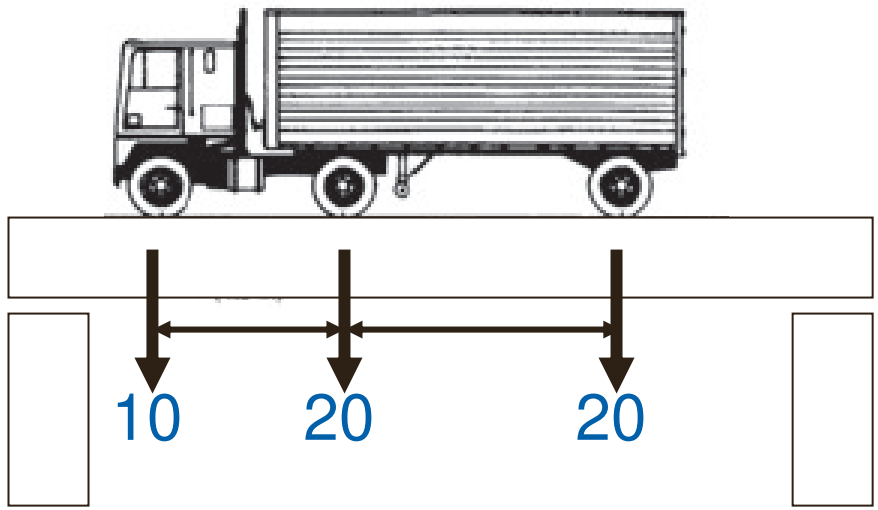
Engineering Principles, ESALs, and Bridge Stress & Strain

Weight Matters!

Pavements



Bridges



Axle Weight Related Pavement Cost Analysis

Methodology

- Uses axle weights of all vehicles to determine cost per ESAL-mile traveled—VA weigh-in-motion data
- Accounts for miles trucks travel at less than full capacity
- Charges only for axle weights above standard legal weight limits
- Can be used to estimate the added maintenance cost from a single overweight trip or for blanket permits

Weight-Related & Axle Configuration Bridge Damage Cost Analysis

Methodology

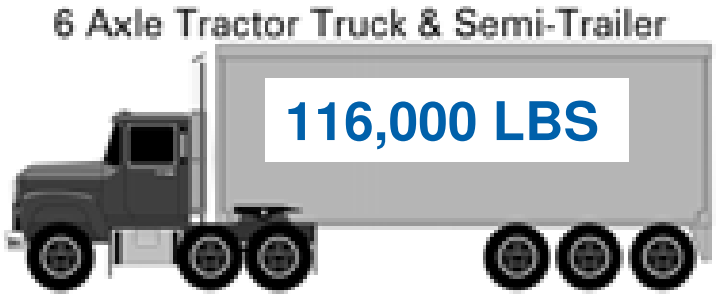
- Incorporated VDOT Structure & Bridge Division permit calculation procedure for effects of truck weight and configuration on bridges
- Uses all DMV hauling permits issued for FY2008 as a base
- 30,000 permits issued affect bridge deterioration and maintenance costs

Findings

- Permit fees for overweight vehicles can be estimated based on sound engineering principles that relate axle weight and configuration to pavement and bridge deterioration
- For pavements, the fee is estimated to be 3.56 cents per ESAL-mile traveled for weights above the standard legal limit
- For a legally loaded tractor trailer, this equates to about 8 cents per mile but does not include any “common costs”.
- For bridges, the fee can be set based on a policy decision to recover either all or a portion of the damage cost per permitted trip
- An automated fee calculator has been developed to provide an easy way to examine fee alternatives

Sample Fee

Single trip



Traveling I-81 NB
325 miles
58 bridges

Pavement Fee	$37.16
Bridge Fee	$105.51
Total	$142.67 [a, b]

[a] Does not include common costs

[b] Fees shown apply only to axle- or gross weight in excess of legal limits

Sample Fee

Blanket Permit



Good for 12 months
Estimated miles: 50,000
Bridges crossed: unknown

Pavement Fee	$2000
Bridge Fee	$403
Total	$2403 [a, b]

[a] Does not include common costs

[b] Fees shown apply only to axle- or gross weight in excess of legal limits

Results of the Analysis: Example Fees [a, b]

Truck	Pounds (000)		Len (Ft)	Dist (Mi)	Permit Fee	
	Permit	Legal			Current	Potential
5 Axle Tractor Truck	100	80	54	50000	$165	$3408
5 Axle Tractor Truck	92	80	48	50000	$165	$1896
3 Axle Dump Truck	60	46	22	10000	$45	$796
4 Axle Concrete Truck	70	58	25	10000	$0	$1158
7 Axle Tractor Truck	122	80	64	20	$14	$54
7 Axle Tractor Truck	132	80	78	335	$46	$150
7 Axle Tractor Truck	132	80	57	335	$36	$161
9 Axle Tractor Truck	168	80	92	335	$50	$217

[a, b] Does not include common costs and fees are only for axle- or gross weights in excess of legal limits

Overweight Permit Fee Administration

- **For pavement damage fees:**
  - **Truck configuration and axle weights reported in permit applications now**
    - ESALS can be readily calculated from this
  - **Estimated mileage can be reported to DMV**
- **For bridge damage fees:**
  - **Truck configuration and axle weights reported in permit application now**
  - **VDOT Structure and Bridge calculates damage caused relative to standard design vehicle now**

Policy Issues Related to Recommending An Overweight Permit Fee Structure

- Should fees be based on pavement impacts, bridge impacts, or both?
  - Permitted overweight load-related pavement impact is approximately $180 million; for bridges, $24 million
- Reasonable fee during difficult economic times
  - Very long haul permit fees could significantly increase shipping costs
- Example exemptions presently in place
  - Containerized freight—7400 permits
  - 2 or 3 axle solid waste—1100 permits
- Revenue potential
  - If all vehicles presently charged for permits paid fees equal to tank wagons, it would generate almost $22 million;
  - If containerized cargo and solid waste paid, it would generate an additional $2.25 million
  - A bracket scale of permit fees that accounted for long-haul blanket permits presently granted at very low amounts could easily generate $30 to $50 million depending on the fees charged.