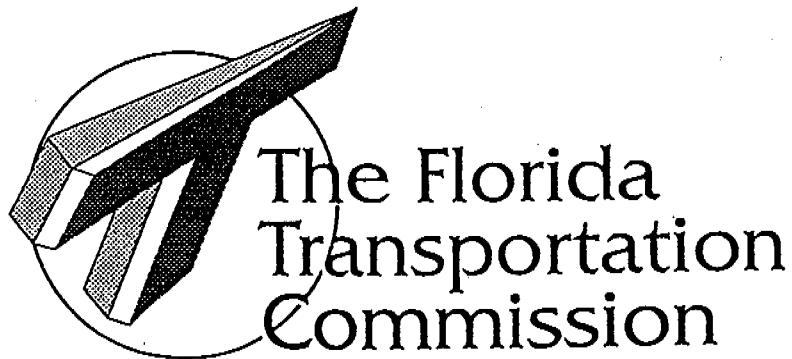

**Truck Weights
and
Penalties in Florida**

July 1993



FLORIDA TRANSPORTATION COMMISSION

Commissioners
David Kerr, Chairman
Burnett Bloodworth
John Browning, Jr.
Donald Estes
Art Kennedy
Jim Kimbrough
Malcolm Kirschenbaum
Wayne Mixson
Phil Reece



Governor
Lawton Chiles

July 7, 1993

Honorable Mario Diaz-Balart
Chairman
Senate Transportation Committee
Room 334, Senate Office Building
Tallahassee, Florida 32399-1100

Honorable Ed Healey
Chairman
House Transportation Committee
Room 406, House Office Building
Tallahassee, Florida 32399-1300

Dear Chairman Diaz-Balart and Chairman Healey,

The enclosed report, *Truck Weights and Penalties in Florida*, was unanimously adopted by the Commission in draft form at its June 10, 1993 public meeting in Tallahassee. The study was undertaken pursuant to provisions of HB 2439, enacted by the 1992 Legislature, directing the Commission to review Florida's regulation of truck weights and associated penalties, and report findings and any proposed legislative changes to the transportation committees by August 1, 1993.

This report was preceded by a 1991 performance audit of the vehicle weights program by the Auditor General, wherein recommendations were made to the Legislature concerning weight limits and overweight penalties. The Commission carefully considered audit recommendations in performing its independent review.

The Commission addressed one major issue not included in the 1991 audit: state policy relating to issuance of overweight permits for truck movement of containerized cargo. This is an issue of considerable importance to Florida's economy that remained unresolved at the end of the 1993 regular session, despite efforts of many interested parties to reach satisfactory resolution.

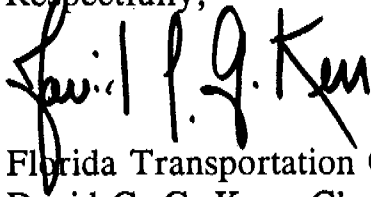
July 7, 1993
Page 2

In preparing the report, the Commission received informational reports and testimony at five public meetings. At December, 1992 and January, 1993 meetings in Tampa and Tallahassee, respectively, testimony was received from major segments of the trucking industry. Statistical analyses and perspectives on issues were also requested and received from the Department and the Florida Seaport Transportation and Economic Development Council. During the review, Commissioners and Commission staff reviewed relevant literature and acquired direct information through site visits to fixed and portable scale operations.

In arriving at recommendations, the Commission balanced economic impacts on important segments of Florida's economy with the state's obligation to protect the highway system from undue damage by heavy loads moved by commercial vehicles.

We hope that you find this report helpful in future deliberations relating to truck weight and penalty issues. We would be happy to respond to questions and provide briefings, as needed or appropriate.

Respectfully,



Florida Transportation Commission
David C. G. Kerr, Chairman

cc: Honorable Lawton Chiles, Governor
Honorable Buddy MacKay, Lieutenant Governor
Members, Senate Transportation Committee
Members, House Transportation Committee
Mr. Jim Skinner, Division Administrator, Federal Highway Administration
Mr. Ben G. Watts, Secretary of Transportation
Mr. Charles L. Lester, Auditor General

TABLE OF CONTENTS

	PAGE
EXECUTIVE SUMMARY	3
INTRODUCTION	9
FINDINGS AND RECOMMENDATIONS	
<i>Issue #1:</i> Should Florida's Allowable Axle Weight Limits Be Lowered?	11
<i>Issue #2:</i> Should Overweight Penalties Be Increased Above The Current Rate Of 5 Cents Per Pound? If Yes, Should A Graduated Penalty Structure Be Instituted?	16
<i>Issue #3:</i> Do Permit Fees For Movement Of Overweight Vehicles Need To Be Revised To Ensure That Costs Of Damage Caused By Permitted Trucks Are Recovered By The State?	24
<i>Commission Background Findings for Issues #4 and #5</i> Relating To State Policy On Issuance Of Overweight Permits For Movement Of Containerized Cargo Over Florida Roads	28
<i>Issue #4:</i> Should The Current Exception Authorizing Overweight Permits For Truck Movement Of Sealed Containers In Maritime Commerce Be Continued?	31
<i>Issue #5:</i> Should The Current Policy Of Issuing Overweight Permits For Truck Movement Of Sealed Containers Shipped In Maritime Commerce Be Expanded To Allow Permit Issuance For Movement Of Overweight Containers In Domestic Commerce Not In Conjunction With A Maritime Shipment?	33

TABLE OF CONTENTS

	PAGE
APPENDICES	
<i>Appendix 1:</i> Testimony Received At Public Hearings	36
<i>Appendix 2:</i> Literature Reviewed	37
<i>Appendix 3:</i> Recommended Penalty Structure	39
<i>Appendix 4:</i> Overweight Permit Fee Schedule	40
<i>Appendix 5:</i> Comparison of Pavement Wear Impacts	41

EXECUTIVE SUMMARY

The 1992 Legislature adopted a provision in HB 2439 directing the Florida Transportation Commission to review Florida's regulation of axle weights, gross weights and associated penalties, and report findings and any proposed legislative changes to the transportation committees of the Legislature by August 1, 1993.

In June, 1991, the Auditor General published a performance audit of the vehicle weights program in which recommendations were made to the Legislature concerning legal weight limits and overweight permits and penalties. The Commission carefully considered audit findings and recommendations in performing its independent review.

The Commission addressed one major issue not included in the Auditor General's report: state policy relating to issuance of overweight permits for truck movement of containerized cargo. This is an issue of considerable importance to Florida's economy that remained unresolved at the end of the 1993 regular session, despite efforts of many interested parties to reach satisfactory resolution.

In preparing the report, the Commission received informational reports and testimony at five public meetings. At December, 1992 and January, 1993 meetings in Tampa and Tallahassee, respectively, the Commission received testimony from major segments of the trucking industry. Following the June 10, 1993 Commission meeting at which tentative findings and conclusions were discussed and adopted, a 10-day public comment period was provided, and all comments received were considered for incorporation in the final report. During conduct of the review, Commissioners and Commission staff reviewed literature relating to truck weights and penalties, and acquired direct information through site visits to fixed and portable scale operations.

Five issues are addressed in the report. Conclusions and recommendations for each are summarized below. Findings for each issue are found in the body of the report.

EXECUTIVE SUMMARY

Issue #1: Should Florida's allowable axle weight limits be lowered?

Conclusion: A reduction in Florida's axle weight limits to the federal limit, with the resulting decrease in cargo per truck that could legally be transported, would significantly increase transportation costs of critical industries and consequently increase retail costs to consumers. A reduction in axle weight limits would also have negative implications for the environment, highway capacity and traffic safety, due to increases in truck fleets and number of trips to transport current cargo volumes under reduced weight limits. Although lower axle weight limits would result in estimated savings of one percent in road construction costs, these savings are far outweighed by anticipated increases in transportation costs and resultant increase in costs of goods and services to consumers.

The impact of reduced weight limits on the cost of road construction and preservation is of special concern. Because raw materials for road construction and preservation are shipped in the types of trucks most impacted by reduced axle weight limits, road construction costs would increase significantly. With transportation needs far exceeding available funding, it is especially important to obtain the most transportation product for each tax dollar spent.

When adverse economic and social impacts are considered on balance with estimated savings to be gained, we conclude that it is not in the best interest of the state to reduce legal axle weight limits.

Recommendation: That no change be made to Florida's legal axle weight limits.

EXECUTIVE SUMMARY

Issue #2: Should overweight penalties be increased above the current rate of 5 cents per pound? If yes, should a graduated penalty structure be instituted?

Conclusion: Florida's current penalty of 5 cents per pound of overweight load has not kept pace with rising costs of program administration, is not sufficient to compensate for damage to pavements caused by overweight trucks and does not deter operation of trucks with overweight loads.

Recommendation: That Florida's overweight penalty be increased in an amount that ensures continued recovery of administrative costs and serves as an economic disincentive to transportation of significantly overweight loads.

The second part of the issue is whether increased penalties should be in the form of a graduated structure or should retain the current flat rate approach.

Conclusion: The current flat rate overweight fine does not take into account the engineering axiom that pavement damage increases exponentially with heavier axle loads.

Recommendation: That the flat rate approach be replaced by a graduated fine schedule that would impose higher penalties for increased damage caused by heavier illegal axle loads. The following penalty schedule is recommended:

<i>Overweight</i>	<i>Penalty ¢/lb.</i>
1 to 1,999 lbs. 10¢
2,000 to 5,999 lbs. 12¢
6,000 to 9,999 lbs. 15¢
10,000 lbs. and over 20¢

We believe that this penalty schedule is both fair and appropriate in light of Florida's higher axle weight limit. In short, once Florida's generous legal weight limits and 10% scale tolerance are substantially exceeded, penalties imposed should be sufficiently severe to have a deterrent effect on future violations -- with the goal of reducing the number of illegally overweight loads causing damage to Florida's roads.

EXECUTIVE SUMMARY

We further recommend that those violators who repeatedly operate at high illegal weights (e.g., 6,000 lbs. or more over the limit) be subject to an additional monetary penalty. The repeat violation penalty should be tied to the individual truck registration and should incorporate a "fresh start" provision following a specified period of violation-free operation.

Implementation of the "repeat violator" provision will require legislative funding approval of enhanced computer capabilities for weight enforcement officers.

Issue #3: Do permit fees for movement of overweight vehicles need to be revised to ensure that costs of damage caused by permitted trucks are recovered by the state?

Conclusion: Revised *trip permit fees* do not adequately ensure that the state is recovering cost of damage to the roads by permitted overweight vehicles.

Current *blanket permit fees* do not recover the cost of damage caused by permitted overweight vehicles, in part due to the statutory cap of \$500 on annual blanket permit fees and in part due to lack of documentation as to number and length of trips made by permittees.

Recommendation: That the Department further revise the *trip permit* fee schedule to incorporate increased resurfacing costs, and any other damage-related factors, to better ensure recovery of pavement damage costs. The proposal should include provision for periodic review of trip permit fees to ensure continued adequacy in recouping damage costs. The resulting proposal, accompanied by methodology and backup data, should be submitted to the Commission for review prior to initiating rule amendment.

That *blanket permits* be retained, and that the statutory cap on annual permit fees be eliminated. It is further recommended that the Department increase blanket permit fees at minimum as proposed in its 1993 legislation, and that it pursue documentation of the number and length of trips by permittees so that future fee revisions will recover costs of damage to roads caused by permittees.

EXECUTIVE SUMMARY

Issue #4: Should the current exception authorizing overweight permits for truck movement of sealed containers in maritime commerce be continued?

Conclusion: Discontinuance of the current exception for overweight containers in maritime commerce would have severe negative economic impacts on broad segments of Florida's economy. It would increase retail costs to Florida consumers, increase transportation costs of Florida exporters, divert cargo from Florida ports and negatively impact port service infrastructure. In light of these severe negative economic impacts, it is in the best interests of the state to continue the limited exception for containerized cargo in conjunction with maritime shipment.

Recommendation: That in the absence of legislative enactment to continue permitting of containerized cargo in conjunction with maritime commerce, the Department take whatever administrative actions are required to continue indefinitely issuance of overweight permits for containerized cargo movements in conjunction with a maritime shipment.

Issue #5: Should the current policy of issuing overweight permits for truck movement of sealed containers shipped in maritime commerce be expanded to allow overweight permits for movement of containerized cargo in domestic commerce *not* in conjunction with a maritime shipment?

Conclusion: To prevent additional damage to pavements caused by increased numbers of heavy loads moved on Florida roads, exceptions to legal weight limits should be allowed only to the extent necessary to accommodate unique load characteristics. An exception from legal weight limits for non-maritime domestic container movements cannot be justified, since such movements do not involve intermodal transfer between ocean-going ships and trucks. Further, non-maritime container truck transportation does not involve the standard maritime business practice of shipping rates charged by volume, not by weight.

EXECUTIVE SUMMARY

In light of Florida's current backlog of deficient roads and limited funding to address those deficiencies, it is not in the state's best interest to allow more heavy truck movements on its highway system, absent unique circumstances that compel exceptions.

Recommendation: That the current policy of issuing overweight permits up to 95,000 lbs. for containerized cargo movements in conjunction with maritime commerce *not* be expanded to non-maritime domestic container movements.

INTRODUCTION

The 1992 Legislature enacted HB 2439 which, in part, directed the Commission to review Florida's regulation of axle weights, gross weights, and penalties associated with each, and report its findings and any proposed legislative changes to the transportation Committees of the Legislature by August 1, 1993.

The Legislative mandate was partially in response to a June, 1991 performance audit of the vehicle weight program by the Office of the Auditor General. That audit made recommendations to the Legislature concerning legal weight limits and penalties imposed for overweight loads. The Commission carefully reviewed the audit and considered its findings and recommendations in conducting its independent inquiry.

The Commission did not address every issue covered in the 1991 audit, but limited its focus to what it felt were matters of foremost legislative concern, consistent with its statutory charge. One major issue not addressed in the audit is included in this report because of its importance to Florida's economy and because it remained unresolved at the end of the 1993 legislative session despite efforts by many to reach resolution: the issue of overweight permitting for truck transport of containerized cargo.

In preparing the study, the Commission received informational reports and testimony at five public meetings. On October 23, 1992, the Commission received a briefing on the Auditor General's performance audit and identified key issues to be addressed in the study. At its December 16, 1992 meeting in Tampa and its January 10, 1993 meeting in Tallahassee, the Commission heard testimony on key issues from segments of the trucking industry, including haulers of construction materials, forestry products, agricultural products and an electric utility provider. At its April 22, 1993 meeting, the Commission received a presentation by the Department in which it outlined its perspective and position on principle issues. Appendix 1 is a complete list of testimony received at public hearings.

On June 10, 1993, at its regular public meeting in Tallahassee, the Commission discussed and adopted tentative findings and recommendations for inclusion in the final report. Following Commission action, the floor was opened for public comment on the draft report; no comments were proffered at that meeting. A ten-day comment period was then provided, and all verbal and written comments received were reviewed and considered for incorporation in the final report.

INTRODUCTION

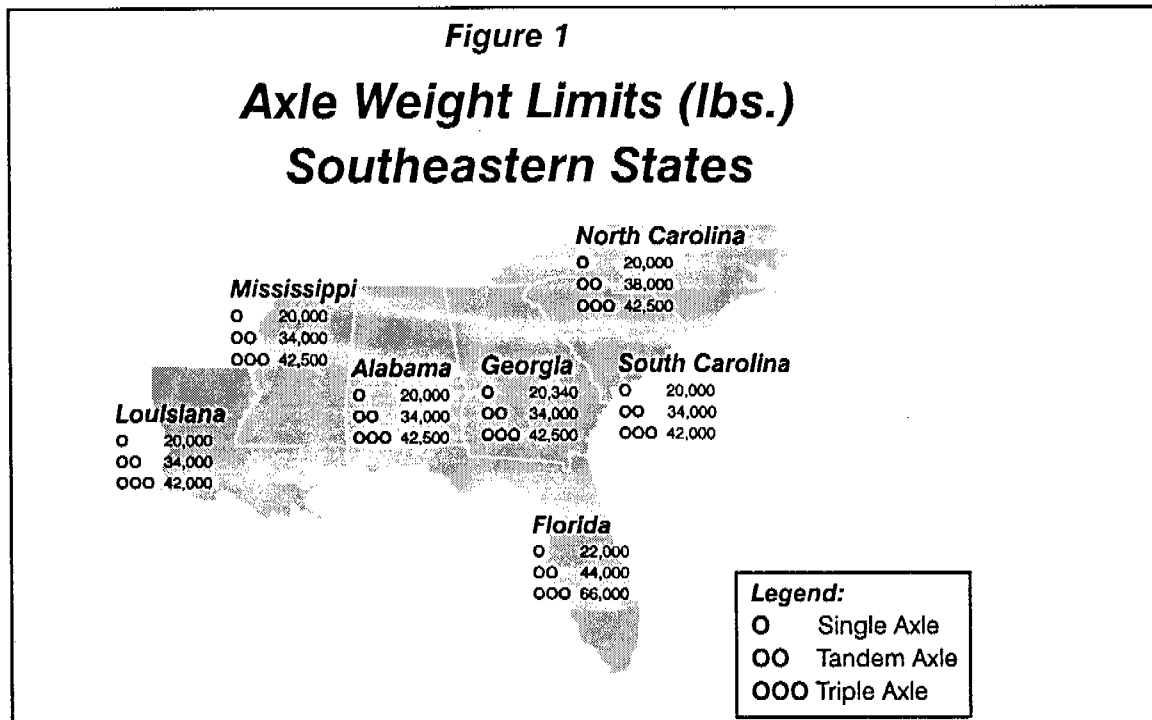
Over a period of several months, Commissioners and Commission staff reviewed research and informational reports relating to truck weight limits, penalties and overweight permitting. A list of literature reviewed in conjunction with the study is provided in Appendix 2. Direct information relating to Florida's weight enforcement activities was acquired through on-site visits to both fixed and portable scales by Commission staff in December, 1992.

Five issues are addressed in the report. Where applicable, a brief summary of the Auditor General's 1991 findings and recommendations immediately follow each issue statement. Commission findings are then presented numerically, along with conclusions and recommendations.

FINDINGS AND RECOMMENDATIONS

Issue #1: Should Florida's allowable axle weight limits be lowered?

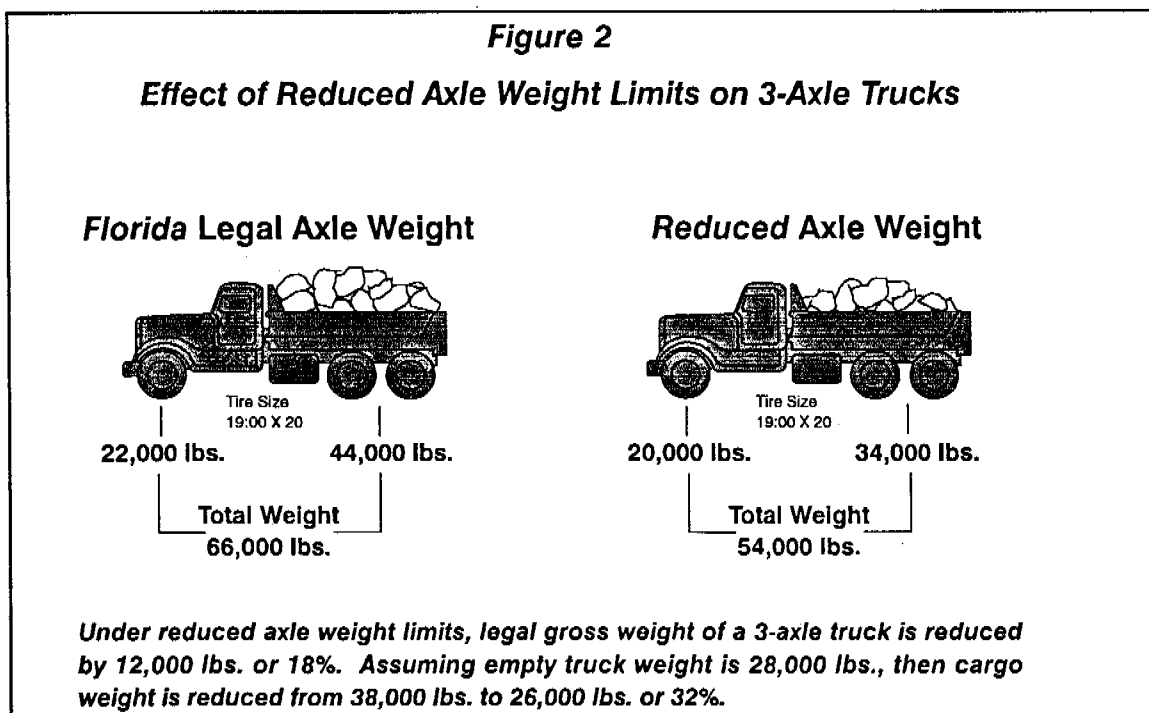
Summary of 1991 Auditor General Findings and Recommendation: Florida's axle weight limits were established in 1953 and are high compared to other states' limits and the federal limit for Interstate highways (see Figure 1). (Note: Florida's higher limits were grandfathered and apply to Florida Interstate highways.) A tandem axle loaded to Florida's legal weight limit of 44,000 lbs. has 2.5 times the impact on road pavement as does the federal tandem axle limit of 34,000 lbs. Lowering weight limits would result in savings in construction and maintenance of roads, but could also result in increased transportation costs because of reduction in hauling capacity of trucks (transportation costs are generally 2 to 3 percent of the total cost of packaged consumer goods). Recommendation: Reduce Florida's allowable axle weights (e.g., to 34,000 lbs. for a tandem axle) to better control damage to roads.



FINDINGS AND RECOMMENDATIONS

Commission Findings: A reduction in Florida's axle weight limits and the resulting decrease in cargo per truck that could legally be transported, would significantly increase transportation costs of various critical industries and consequently increase costs to consumers. A reduction in axle weight limits also would have direct negative implications for the environment, highway capacity and traffic safety. Specifically, testimony given in December, 1992 and January, 1993, identified the following impacts:

1. *Increase in Transportation Costs.* A reduction in legal tandem axle weight limits from 44,000 lbs. to 34,000 lbs. significantly decreases the payload of certain types of trucks, particularly 3-axle straight trucks and 4-axle semitrailers, used primarily in construction and agricultural hauling (see Figure 2). Most 5-axle tractor-semitrailer combinations do not reach the 44,000 lb. tandem axle weight limit due to the gross weight limit of 80,000 lbs.



The citrus industry testified that the estimated impact of "deadweight" losses due to lower axle weight limits would be almost \$12 million for the 1992/93 season. Long-term projections were not quantified, but involve interaction of factors such as capital costs of replacing current hauling equipment, sizes of future citrus harvests, and increases in base hauling costs.

FINDINGS AND RECOMMENDATIONS

The concrete industry testified that the collective impact on ready-mix concrete haulers, concrete block haulers and construction aggregate (rock and sand) haulers would be \$283 million annually under current production volumes -- all of which would be passed on to consumers. At 1989 production levels, the "passed on" cost would be about \$367 million annually.

The limerock and aggregate industry testified that the greatest impact of lower axle weight limits would be on trucks that operate solely within the state, since interstate haulers currently must comply with lower axle weight limits of adjacent states. It was pointed out that trucks hauling bulky, low value products (e.g., construction materials; agriculture and forestry products) would be affected most. A reduction of allowable tandem axle weight to 34,000 lbs. would increase the transport cost of construction materials by approximately three cents (\$.03) per ton mile or 35 percent. Transportation costs of low value, bulky materials often are in excess of 20 percent of their total cost (as contrasted with transportation cost comprising 2 to 3 percent of the total cost of packaged consumer goods).

The electric utilities industry testified that lower axle weight limits will result in reduced payloads of materials and equipment for construction, operation and maintenance of utility distribution, transportation and substation facilities. This reduced hauling capacity will add to transport costs, which will increase the cost of services to consumers. From the standpoint of quality utility service, lower axle weights would lengthen the time required to restore service following serious outages, because "multiple tripping" would be required.

2. *Adverse Environmental Effects.* Nearly all testimony identified one or more negative environmental impacts, all consequences of the need for additional vehicles to carry the same volume of cargo under reduced axle weight limits:
 - o Lower air quality due to increased vehicle emissions, of particular concern in non-attainment areas;
 - o Reduced energy conservation due to additional fuel consumption, contrary to current efforts to reduce fuel consumption per unit of production;

FINDINGS AND RECOMMENDATIONS

- o Negative incentive to conversion of utility fleets to alternatively fueled vehicles, in that such conversions involve hardware that adds to vehicle weight and results in reduced payload; and
 - o Disposal problems from increased use of motor oil, tires and batteries.
3. *Increased traffic congestion.* Industry testimony identified increases in truck fleets and number of trips to transport current cargo volumes under reduced axle weight limits -- with the result that the volume of truck traffic on Florida roads would increase substantially:
- o the citrus industry estimated an additional 40,000 to 70,000 trips during the 1992/93 season.
 - o the concrete industry estimated that its fleet would have to be increased by 35% or 850 trucks in order to carry the current volume of product.
 - o the limerock and aggregate industry estimated that reduced axle weight limits would increase the number of trucks hauling in intrastate traffic by about 40 percent.
4. *Concerns for Highway Safety.* Nearly all testimony included a statement of concern for highway safety as a consequence of increased heavy truck trips necessitated by lower axle weight limits.

The aforementioned transportation and social costs must be balanced against any savings in road construction and preservation resulting from reduced axle weight limits. Based on Department engineering design standards and analysis of potential reduction in axle weight limits, findings are as follows:

1. Florida designs road pavements to adequately support actual weights of trucks using the roads and projected increases in volume over the design life of the road. Consequently, roads on the State Highway System either have been designed and built to accommodate current truck traffic and actual truck loadings, or will be upgraded to do so during preservation work.
2. A reduction in tandem axle weight limits from 44,000 lbs. to 34,000 lbs. would result in a reduction in required asphalt thickness of approximately 3/10 inch, for a savings of about \$0.60 per square yard of pavement, or some \$8,500 per mile of 2-lane road. Based on 1991

FINDINGS AND RECOMMENDATIONS

construction cost of \$700,000 to \$1,000,000 per mile for this type of road, savings would be about one percent of the construction cost. It is also estimated that such a reduction in axle weights would result in a 25 percent increase in truck trips needed to carry the same amount of cargo. Savings would be offset to some extent by projected increases in volume of truck traffic.

3. While it is accurate that a 44,000 lb. tandem axle has 2.5 times the ESAL (equivalent single axle load; equals 18,000 lbs.) impact as a 34,000 lb. tandem axle, analysis of reduction in axle weight limits must also consider the increase in truck trips to haul the same volume of cargo under reduced axle weight limits. When that increase is considered in analyses using a 4-axle tractor-semitrailer and 3-axle truck, the actual number of ESALs that would be applied to a pavement by a 44,000 lb. tandem axle is, respectively, about 1.5 and 1.3 times the number of ESALs applied by a 34,000 lb. tandem axle - instead of 2.5 times.

Commission Conclusion: Estimated savings of one percent or less in road construction costs are far outweighed by anticipated increases in transportation costs and resultant increase in cost of goods and services to consumers.

The impact of reduced axle weight limits on costs of road construction and preservation is of special concern to us. Because raw materials used in road construction and preservation are shipped in the types of trucks most impacted by reduced axle weight limits, road construction costs would increase significantly. With transportation needs far exceeding available funding, it is especially important to obtain the most transportation product for each tax dollar spent. The public investment in existing roads must also be protected by preventing unreasonable damage by heavy trucks; however, there is evidence that for little additional cost, older Florida roads are being upgraded to accommodate current and projected truck axle loads.

When the adverse economic and social impacts are considered on balance with estimated savings to be gained, we conclude that it is not in the best interest of the state to reduce legal axle weight limits.

Commission Recommendation: That no change be made to Florida's legal axle weight limits.

FINDINGS AND RECOMMENDATIONS

Issue #2: Should overweight penalties be increased above the current rate of 5 cents per pound? If yes, should a graduated penalty structure be instituted?

Summary of 1991 Auditor General Findings and Recommendations:

The current overweight fine of 5 cents per pound was established 40 years (1953) ago and is insufficient to discourage noncompliance with weight limits. The value of the penalty has decreased in relation to road repair costs and its deterrent effect on the trucking industry.

The penalty should be structured so that those violations causing most damage are punished more severely (such "graduated" fine structures exist in 28 states). Certain concessions (lower fine for axle weight violation of 1,000 lbs. or less, than for gross weight violation; no fine imposed if load is shifted within one hour and legal axle weight achieved) are currently provided to compensate truckers for the difficulty in estimating actual axle weight; however, compensation is already given in the form of a 10 percent scale tolerance. Recommendations: (1) Adopt a graduated penalty structure; (2) Increase the maximum penalty rate above the current rate of 5 cents per pound; and (3) Eliminate the lower fine provision for axle weight violations in order to make penalties for axle weight violations the same as those for gross weight violations.

Commission Findings: While current penalty revenues recover the cost of administration of the weight enforcement program with remaining "net" revenue deposited in the transportation trust fund, current penalties are found to be insufficient to (1) cover the cost of damage to road pavements by overweight trucks or (2) deter operation of trucks with overweight loads.

1. According to Department data, for the 5-year period from FY 1987/88 through FY 1991/92, revenue from overweight penalties was \$39.4 million, while the cost of administering the weight enforcement program was \$30.7 million over the same 5-year period. The remaining "net" penalty revenue of \$8.7 million was deposited in the State Transportation Trust Fund. The Department testified that it is not known whether the \$8.7 million (average \$1.74 million per year) was sufficient to repair pavement damage caused by overweight loads since data is not available as to (1) how many miles were traveled while trucks were operated in an overweight condition, and (2) the types and thicknesses of pavements on which overweight vehicles were operated.

FINDINGS AND RECOMMENDATIONS

2. For FY 1991/92, revenue from overweight penalties of \$8.3 million exceeded the cost of weight enforcement program administration (\$7.5 million) by only \$800,000, primarily due to increases in the law enforcement step pay plan. As operating costs grow, the gap is narrowed between program administration costs and overweight penalty revenue totals. The \$800,000 in net revenue for FY 1991/92 would resurface 6 miles of rural 2-lane road or 3 miles of urban 4-lane expressway.
3. According to research by the Transportation Research Board, estimating the effects of illegally overweight trucks on pavement costs is difficult because reliable estimates of the magnitude and frequency of illegal overloads are not available. Best estimates by the Federal Highway Administration in 1989 are that about 10 to 20 percent of all combination vehicles are operating illegally overweight. It is not known, of course, what percentage of these trucks are weighed and fined.
4. As to the deterrent effect of current penalties, the Department testified that penalties were probably not sufficient to deter operation of trucks with overweight loads. Citing 1992 research by a private transportation research group, the ENO Transportation Foundation, the Department stated that in 1960, average revenue per ton-mile for intercity trucking was 6.3 cents. By 1990, it had increased to 22.1 cents per ton-mile, increasing the potential reward for operating an overweight truck by a factor of over 3.5, with no offsetting increase in penalty rates. The Department stated that this favorable environment for overweight operation is aggravated by a lower probability of detection due to increased non-weight enforcement related activities of motor carrier compliance personnel and a larger pool of potential violators because of more trucks on the road.
5. The Auditor General found that the current penalty of 5 cents per pound has lost value over time since its establishment in 1953. He cited that the consumer price index increased 388% between 1953 and 1990 and concluded that the value of the penalty has decreased in relation to road repair costs and its deterrent effect on the trucking industry.

FINDINGS AND RECOMMENDATIONS

6. Comparisons of Florida's gross and axle weight fines with those of other southeastern states are shown in Figures 3, 4 and 5, on pages 19 and 20.

Figure 3 compares minimum fines for selected gross weight overloads. Florida has the highest fine for 1,000 and 5,000 lbs. over the allowable gross weight, while Mississippi and North Carolina share "highest fine" status for other overweight amounts selected for comparison.

Figure 4 is a line graph comparing Florida's fines for various overweight amounts to those of other southeastern states. Florida's fines are slightly higher than other states at lower overweight amounts, but other states tend to have higher fines than does Florida for more severe illegal overloads.

Figure 5 compares southeastern states' penalties for tandem axle loads of 46,000 lbs. and 48,000 lbs. It should be noted that while these axle weight amounts are 2,000 lbs. and 4,000 lbs. overweight in Florida, they are 12,000 lbs. and 14,000 lbs. overweight in most other states. As shown, Mississippi has the highest penalties and Florida has the lowest.

Commission Conclusion: Florida's current penalty of 5 cents per pound of overweight load has not kept pace with rising costs of program administration, is not sufficient to compensate for damage to pavements caused by overweight trucks and does not deter operation of trucks with overweight loads.

Commission Recommendation: That Florida's overweight penalty be increased in an amount that ensures continued recovery of administrative costs and serves as an economic disincentive to transportation of significantly overweight loads.

FINDINGS AND RECOMMENDATIONS

Figure 3 Minimum Fines For Gross Weight Overloads

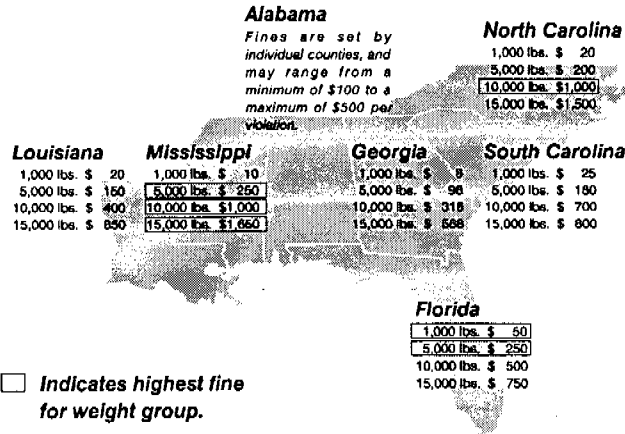
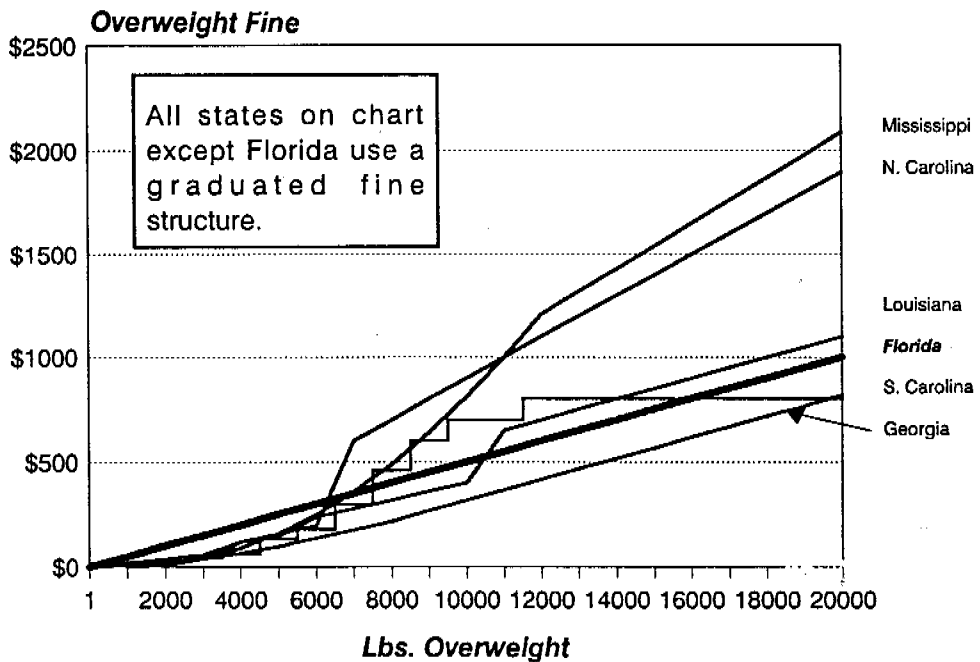
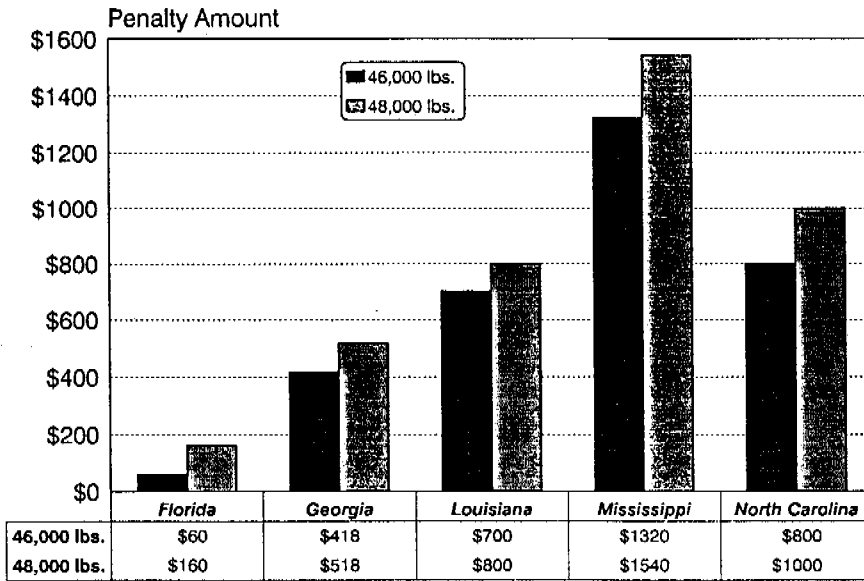


Figure 4 Comparison of Overweight Fines in Southeastern States



FINDINGS AND RECOMMENDATIONS

Figure 5
Penalties for Tandem Axle Weight Violations



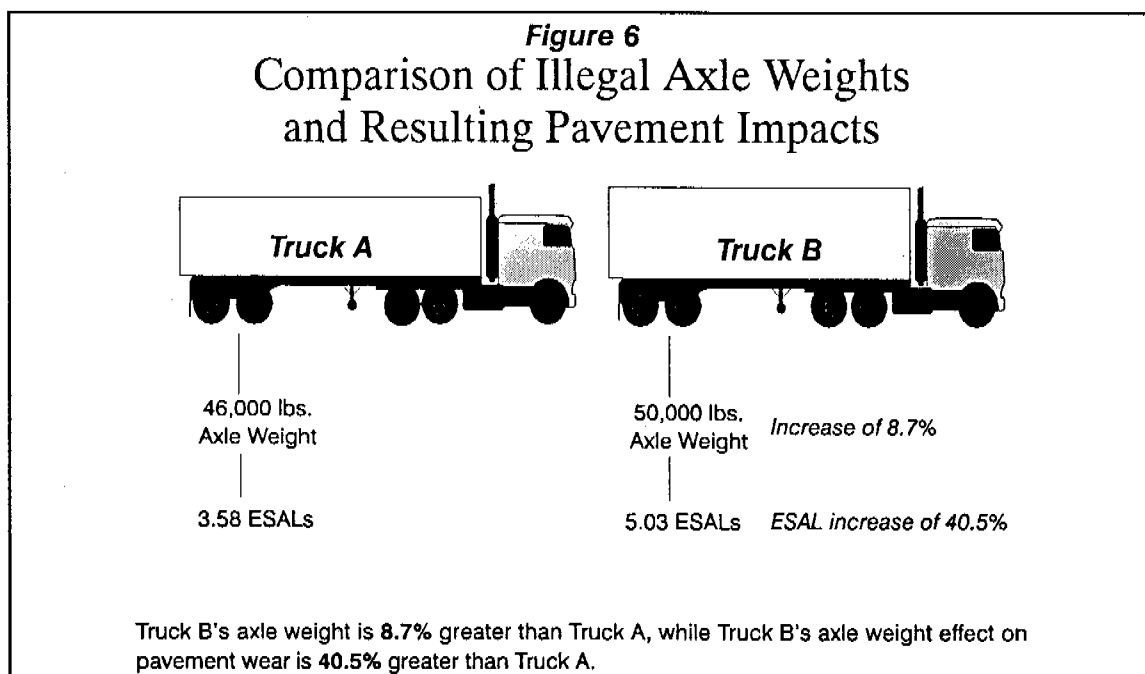
Note: South Carolina - Maximum penalty of \$100. The individual enforcement officers determines the exact amount.

FINDINGS AND RECOMMENDATIONS

The second part of the issue is whether recommended increased penalties should be in the form of a graduated structure or should retain the flat rate approach currently in place.

Commission Findings:

1. It is now a well established transportation engineering principle that pavement damage increases exponentially with heavier axle loads. The effect of a single axle on pavement increases as approximately a fourth-power function of axle load. For example, although a 36,000 lb. single axle is only twice as heavy as an 18,000 lb. single axle load, it causes 17 times more loss in pavement life.
2. Thus, pavement damage increases sharply as the amount of illegal axle weight increases. For example, a truck that is 20% overweight will cause about 75 percent more pavement wear than the same truck operating at maximum legal weight (see Figure 6 for example.)
3. In its response to the Commission, the Department agreed that a graduated fine structure is supportable from an engineering standpoint in light of the exponential relationship between axle weight and pavement damage.



FINDINGS AND RECOMMENDATIONS

Commission Conclusion: The current flat rate overweight fine does not take into account the engineering axiom that pavement damage increases exponentially with heavier axle loads.

Commission Recommendation: That the flat rate approach be replaced by a graduated fine schedule that would impose higher penalties for increased damage caused by heavier illegal axle loads. It is recommended that the graduated fine schedule be applied both to axle weight and gross weight violations but that it not apply to tax class violations where there is no violation of legal gross weight limits. The following penalty schedule is recommended:

<i>Overweight</i>	<i>Penalty ¢/lb.</i>
1 to 1,999 lbs.	10¢
2,000 to 5,999 lbs.	12¢
6,000 to 9,999 lbs.	15¢
10,000 lbs. and over	20¢

We recommend a pyramid rate structure wherein each rate specified in the graduated schedule would apply only to that portion of the load subject to that rate, and would not apply to the entire overweight load (see Figure 7 on page 23 for example).

The recommended penalty schedule imposes a fine of 10¢ per pound, or double the current fine, on the first 1,999 lbs. of illegally overweight load, but only after the 10% scale tolerance has been exceeded. The schedule imposes the highest fine, 20¢ per pound, on illegal loads of 10,000 lbs. and over. We believe that this proposed penalty schedule is both fair and appropriate in light of Florida's higher legal axle weight limit. In short, once Florida's generous legal weight limits and tolerance are substantially exceeded, penalties imposed should be sufficiently severe to have a deterrent effect on future violations -- with the goal of reducing the number of illegally overweight loads causing damage to Florida's roads.

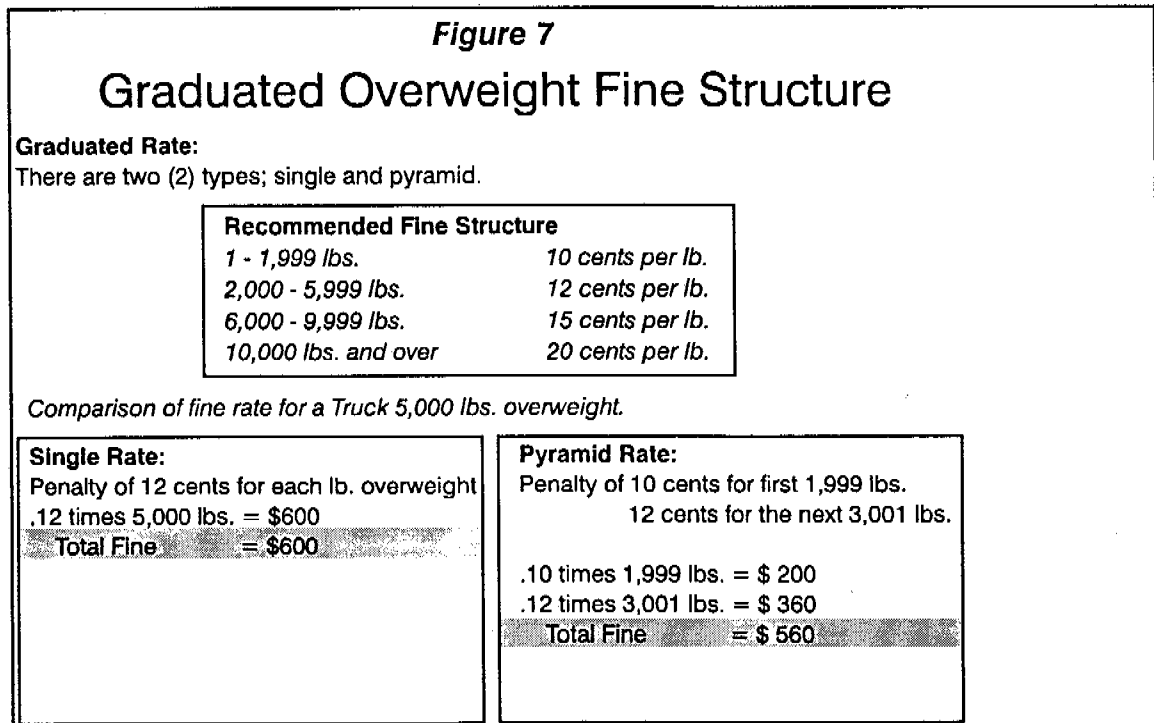
Comparisons with current penalties and current overweight penalty revenues are found in Appendix 3.

FINDINGS AND RECOMMENDATIONS

We further recommend that those violators who repeatedly operate at high illegal weights (e.g., 6,000 lbs. or more over the limit) be subject to an additional monetary penalty either in the form of a flat surcharge that would increase with each successive serious violation, or a percentage of the overweight fine, which percentage would increase with repeated violations. We recommend that the repeat violation penalty be tied to the individual truck registration and that it incorporate a "fresh start" provision following a specified period of violation-free operation.

Implementation of the "repeat violator" provision will require legislative funding approval of enhanced computer capabilities for weight enforcement officers.

While we feel that the above recommendations address the principal issues related to overweight penalties, we recognize that there are several sub-issues that are not included here and that will require resolution during development of implementing legislation.



FINDINGS AND RECOMMENDATIONS

Issue #3: Do permit fees for movement of overweight vehicles need to be revised to ensure that costs of damage caused by permitted trucks are recovered by the state?

Summary of 1991 Auditor General Findings and Recommendations: States recognize the need for exceptions to legal weight limits for certain types of loads (primarily of a nondivisible nature), but overweight loads cause additional damage to roads. Truck owners should pay the additional cost to repair roads damaged by their vehicles. Vehicle weight and distance traveled are factors that affect the amount of damage caused by permitted overweight trucks. States often base permit fees on such factors in order to recover highway repair costs.

Fees for trip permits (5-day use, one-way trip) underestimate costs to repair damage because they are based on 1982 resurfacing costs and are not based on actual trip distance. Fees for blanket permits (12-month use, unlimited trips) do not ensure recovery of costs to repair damage since the fee assumes 10 trips per year, but actual travel distance is unknown. When permit fees do not recover such costs, permitted trucks' travel costs are subsidized by other highway users. Recommendations: (1) Revise trip permit fees to reflect current pavement resurfacing costs and actual trip distance; and (2) Eliminate blanket permits and authorize other types of permits (e.g. permit books), or limit the number of trips under a blanket permit.

Commission Findings: *Trip Permit Fees*

1. In its May, 1991 response to Auditor General recommendations, the Department committed to review the trip permit fee schedule and revise fees to reflect current resurfacing costs and actual trip distance. In early 1992, the Department proposed a revised trip permit fee schedule by rule, and in April, 1992 the new rule took effect. Revised fees are stated on a "cost per mile" basis ranging from 27 cents/mile to 45 cents/mile, and were calculated so that the fee for "average trip" distance (75 miles based on historical data) is equal to the former fixed fee for each weight category (see Appendix 4). In the rule's economic impact statement, the Department estimates that the new fee schedule will produce the same total revenue as the previous one, since average trip distance was used to calculate former permit fees.

FINDINGS AND RECOMMENDATIONS

2. Although the revised trip permit fee schedule now bases the fee on actual miles traveled (with trucks traveling more than 75 miles paying a higher fee than before and trucks traveling less than 75 miles paying a lower fee than before), the new schedule does not reflect increased costs of resurfacing over time. The 1991 audit found that the former fee schedule reflected 1982 resurfacing costs and recommended that fees be revised to reflect 1990 costs. There is no evidence that the Department took such updated costs into account when developing the revised schedule.

Commission Conclusion: Revised trip permit fees do not adequately ensure that the state is recovering the cost of damage to roads by permitted overweight vehicles.

Commission Recommendation: That the Department further revise the trip permit fee schedule to incorporate increased resurfacing costs, and any other damage-related factors, to better ensure recovery of pavement damage costs. The proposal should include provision for periodic review of trip permit fees to ensure continued adequacy in recouping damage costs. The resulting proposal, accompanied by methodology and backup data, should be submitted to the Commission for review prior to initiating rule amendment.

Commission Findings: *Blanket Permit Fees*

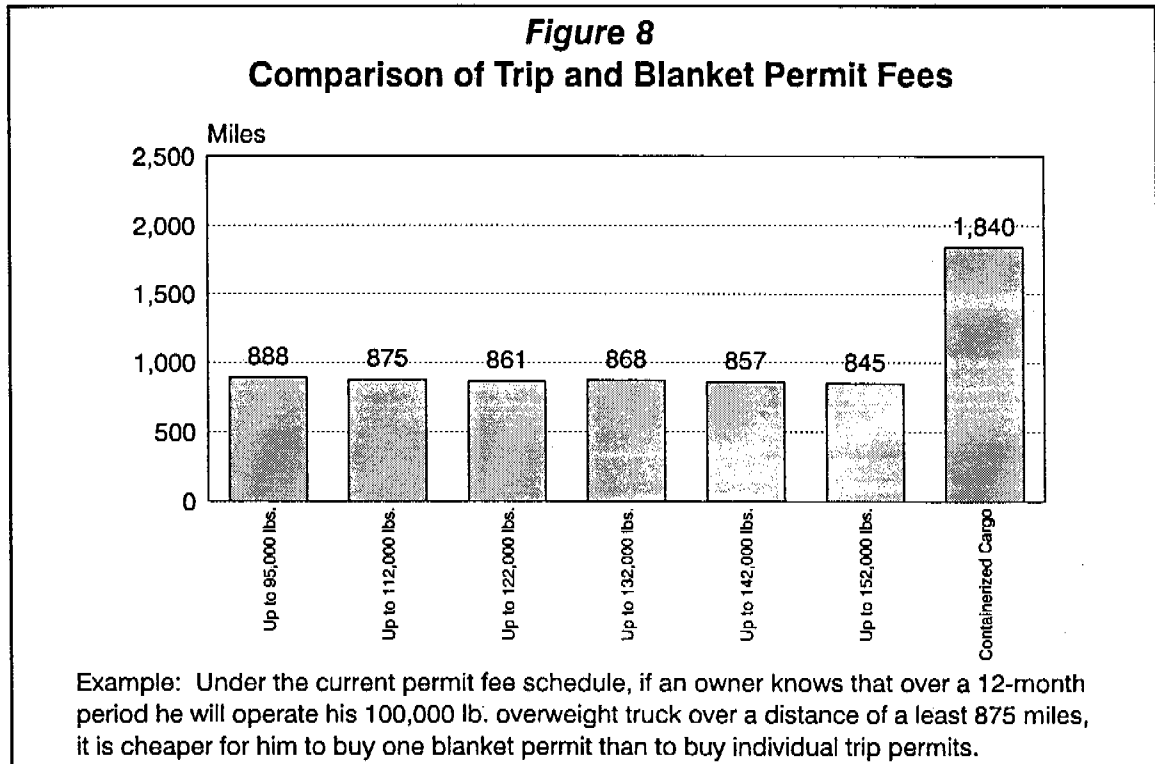
1. In FY 1991/92, of total overweight trip and blanket permits issued, about 5,000 or 11.5% were blanket permits. Of the 5,000 total blanket permits, 97.3% were for transportation of construction/industrial equipment, and 2.7% were for containerized cargo units. Total revenue from overweight blanket permits was about \$670,000. It is not known how many trips were made or how many total miles were traveled under those permits.
2. The Auditor General recommended elimination of blanket permits in favor of alternatives like permit (coupon) books, or limitation of the number of trips allowed under a blanket permit. These alternatives and others were considered in this study, and each seemed to involve additional recordkeeping, reporting or other administrative burdens that diminish the benefits and efficiencies of blanket permitting.

FINDINGS AND RECOMMENDATIONS

Other options, like limitations on the number or length of trips per blanket permit, posed enforcement challenges. Instead of eliminating blanket permits, we believe that efforts should be directed to adjustment of blanket permit fees so that permitted trucks pay for damage caused. This could be accomplished by documenting over time through field surveys, the number and length of trips made on blanket permits.

3. Unlike trip permits, for which authority to set fees by administrative rule is delegated by law to the Department, the law provides that for blanket permits, the Department may charge an annualized fee not to exceed \$500. Historically, annual blanket permit fees were set by multiplying the trip permit fee by 10 -- under the assumption that 10 trips was the average number taken annually under a blanket permit, with fees ranging from \$240 to \$380 (see Appendix 4). The exceptions are containerized cargo units (up to 95,000 lbs.), for which the blanket permit fee is \$500 (the statutory cap) instead of \$240 (trip fee of \$24 multiplied by 10). The assumption underlying this exception is that haulers of containerized cargo take more trips under blanket permits than do haulers of other goods.
4. When trip permit fees were revised by rule in 1992, blanket permit fees remained unchanged. As part of its 1993 legislative package, the Department pursued legislation to authorize issuance of 6-month blanket permits for trucks weighing in excess of 112,000 lbs., which would have had the effect of doubling current blanket permit fees for the heavier classes of overweight trucks. During session, amendments resulted in fees being capped at \$800. This proposal was part of an omnibus truck regulation bill that was not enacted into law.
5. The Department stated that because 1993 legislation increasing blanket permit fees did not pass, trip permit fees are approaching the cost of blanket permit fees in some instances, with the consequence that it is to the benefit of some carriers to purchase blanket permits in lieu of single trip permits (see Figure 8 on page 27).

FINDINGS AND RECOMMENDATIONS



- The Department has indicated that ideally, the statutory cap should be eliminated. If the cap were repealed, the Department would have authority to set blanket permit fees by rule, as is the case with trip permit fees. Fees could then be set and periodically adjusted to more closely approximate the cost of damage caused by permitted overweight trucks.

Commission Conclusion: Current blanket permit fees do not recover the cost of damage caused by permitted overweight vehicles, in part due to the statutory cap of \$500 on annual blanket permit fees and in part due to lack of documentation as to number and length of trips made by permittees.

Commission Recommendation: That the blanket permitting process be retained and that the statutory cap on annual permit fees be eliminated. It is further recommended that the Department increase blanket permit fees at minimum as proposed in its 1993 legislation, and that it pursue documentation of the number and length of trips by permittees so that future fee revisions will recover costs of damage to roads caused by permittees.

FINDINGS AND RECOMMENDATIONS

Issues #4 and #5 relate to state policy on issuance of overweight permits for movement of containerized cargo over Florida roads.

Commission Background Findings:

1. A gross weight limit of 80,000 lbs. is imposed by Federal law on the Interstate system and by almost all states for other roads. However, all states allow exceptions for certain goods that cannot be hauled within the legal limit. These "nondivisible" or "not readily divisible" loads are granted exceptions because the load cannot be divided easily into smaller units, e.g., a cast metal ship propeller cannot be broken into smaller units without destroying the propeller. Although criteria for nondivisible loads may vary, the universal principle is that such exceptions are granted because of unique characteristics of the load that necessitate exceeding legal weight limits.

Florida and other eastern seaboard states have granted an overweight exception to sealed containerized cargo moving in international maritime commerce.

2. Since 1984, Federal Highway Administration (FHWA) policy has been that classification of a unit as nondivisible or not easily divisible is a determination best made at the state level and that FHWA had no difficulty construing containerized cargo involved in international trade as a nondivisible load. In its policy statement, FHWA cites the need for a proper balance between the needs of commerce and concerns with the weights of vehicles using the system. FHWA based its position on the needs of international commerce and furthering the U.S. position in world trade, and cited the role of ports in developing programs to link ocean and motor carriers, who in turn use the Interstate Highway network to speed the flow of commerce. In February, 1993, FHWA published a proposed rule (adoption likely in Fall, 1993), which in part, provides that a state may treat a sealed containerized load moving in international commerce as a nondivisible load. FHWA comments that this option codifies policy in effect since 1984.
3. Beginning in 1986 by Department policy, and since August, 1989 by administrative rule, Florida has provided for issuance of overweight permits to move sealed ocean-going containers involved in international commerce, up to 95,000 lbs. gross weight.

FINDINGS AND RECOMMENDATIONS

4. In December, 1989, following adoption of the rule, the Florida Trucking Association (FTA) and others filed suit in federal court, claiming that the rule violated the equal protection and commerce clauses of the U.S. Constitution in that the rule provided a benefit to shippers of containers in international trade that was denied to domestic shippers.
5. Based on its assessment of prevailing in court, the Department reached a settlement with the FTA in which the Department agreed to repeal the rule. At the time, the Department was concerned that to amend the rule include domestic haulers would result in damage to the State Highway System and loss of federal highway funding.
6. The rule was repealed effective October 6, 1992, and since that time no annual blanket permits have been issued for containerized cargo units. However, outstanding permits (the last of which expires August 18, 1993) created an unequal competitive environment which was remedied by emergency rule authorizing issuance of temporary permits valid until August 18, 1993.
7. Legislation to continue overweight permitting of containerized cargo was considered by both the Senate and House during the 1993 legislative session, but because of disagreement on the scope of the exception, no legislation passed.

The House bill would have retained the requirement that in order to qualify for an overweight permit, the containerized cargo must be involved in maritime commerce.

The Senate bill would have opened overweight permitting to any vehicle transporting a sealed containerized cargo unit (defined broadly as having a permanent top, bottom and sides, with doors, hatches or valves that remain sealed during transport), with no requirement for involvement in maritime commerce. Movements would be restricted to no more than one destination within the state.

8. Informally, FHWA summarized its present position as giving states the option to consider containerized cargo in international maritime commerce as a nondivisible load, but stated that the option does not extend to domestic container movements.

FINDINGS AND RECOMMENDATIONS

9. Absent intervening action by the Department or Legislature, all permitting of overweight containerized cargo would have ceased on August 18, 1993.
10. However, the Department took action to continue overweight permitting for movement of sealed containerized cargo in conjunction with an international or domestic maritime shipment by filing an emergency rule on June 16, 1993. The new emergency rule will be in effect for 90 days (expires on September 14, 1993), while permanent rulemaking is underway. In the event that the permanent rule is challenged, the emergency rule could be extended.

FINDINGS AND RECOMMENDATIONS

Issue #4: Should the current exception authorizing overweight permits for truck movement of sealed containers in maritime commerce be continued?

Commission Findings: Discontinuance of the current exception for overweight containers in maritime commerce would have a severe negative economic impact on broad segments of Florida's economy. It would increase retail costs to Florida consumers, increase transportation costs of Florida exporters, divert cargo from Florida ports and negatively impact port service infrastructure.

1. A total of about 10 million metric tons of containerized cargo moved over Florida ports in CY 1992. Of that total, 53% originated from, or was destined to, other states, while 47% originated from, or was destined, within Florida.
2. Based on studies in 1989 and 1991, it is estimated that containerized ocean freight handled by Florida's deep water ports during CY 1992 alone, contributed \$565 million of direct economic impact on Florida's economy. Note: "Direct Economic Impact" is "...the initial round of expenditures and employment generated by port industries and users directly associated with cargo flow activities originating at the port."
3. Based on the fact that 53% of containerized ocean freight moving through Florida ports is coming from, or going to, destinations north and west of the state, it is estimated that cargo originating from, or destined to, other states accounted for over \$299 million of impact on Florida's economy.
4. If permitting of overweight containers ceased, transportation costs would increase because containerized cargo would have to be divided into smaller truckload shipments at the port before being moved. Since ocean shipping rates are priced per container, transportation costs would also increase if ocean carriers were forced to use more container loads to move the same amount of cargo being delivered today. In either case, the ultimate consumer would pay higher prices for goods, since increased transportation costs would be reflected in higher retail prices.

FINDINGS AND RECOMMENDATIONS

5. Florida exporters will be placed at a competitive disadvantage in international markets if cargo must be shipped in more containers than presently used, or if it must be re-handled at the port for transfer from smaller over-the-road trailers into ocean-going containers. In both cases, exporters' transportation costs will rise if cessation of permitting overweight containers forces either use of more containers or double handling of products.
6. Florida ports would be placed at a severe competitive disadvantage with nearby out-of-state ports if overweight permitting of container cargo was discontinued. Presently, 33% of containerized cargo exiting Florida ports originates in states north and west of Florida. Such cargo can be diverted easily from Florida ports to ports in Louisiana, Alabama, Georgia, North and South Carolina if Florida limits container weight limits to levels below those allowed by adjacent and neighboring states. Moreover, it is likely that a shipping line would divert all of its cargo -- not only its container cargo -- to neighboring ports, since a given ship will carry a mix container and non-container cargo, and would avoid the inefficiencies of multiple ports of call.
7. If containerized cargo is diverted from Florida ports, companies which exist to service that cargo would be impacted negatively. Vessels diverted to ports in other states would no longer need the stevedores, longshoremen, ship agents, customs brokers, vessel fuel, pilotage, and rail or trucking services presently employing Floridians. As these companies reduced their activity, taxes collected on their payrolls and property would be reduced. Reductions in workforce would result in a reduction of the "ripple factor" throughout the Florida economy produced by expenditure of payroll dollars.

Commission Conclusion: In light of the severe negative economic impacts that would result from discontinuance of permitting overweight containers in maritime commerce, it is in the best interests of the state to continue the limited exception for containerized cargo in conjunction with maritime shipment.

Commission Recommendation: That in the absence of legislative enactment to continue permitting of containerized cargo in conjunction with maritime commerce, the Department take whatever administrative actions are required to continue indefinitely issuance of overweight permits for containerized cargo movements in conjunction with a maritime shipment.

FINDINGS AND RECOMMENDATIONS

Issue #5: Should the current policy of issuing overweight permits for truck movement of sealed containers shipped in maritime commerce be expanded to allow permit issuance for movement of overweight containers in domestic commerce not in conjunction with a maritime shipment?

Commission Findings: In order to prevent additional damage to pavements caused by increasing the number of heavy loads moved on Florida roads, exceptions to legal weight limits should be granted only to the extent necessary to accommodate unique load characteristics. While we find that justification exists for excepting container movements in maritime commerce, we do not find that an exception from legal weight limits for domestic container movements is warranted.

1. Sealed containers in maritime commerce have been granted exceptions by Florida and neighboring maritime states pursuant to permissive federal policy because containers are the universally and internationally accepted method of transporting and transferring cargo in the intermodal chain of ship to rail or ship to truck or combinations involving all three transportation modes.
2. Ocean shipping rates are priced "per container," i.e., by volume of cargo and not by weight of goods shipped. Thus, global competitiveness in maritime shipping is achieved by filling containers to capacity -- creating the need for allowance up to 95,000 lbs. to move containers by trucks.
3. Adjacent and nearby states also provide exceptions from gross weight limits for sealed ocean-going containers restricted, like Florida, to containers involved in maritime commerce. Some allow weights in excess of Florida's limit of 95,000 lbs., while others are lower (e.g., South Carolina allows up to a maximum of 90,000 lbs., while Georgia allows up to 100,000 lbs.)
4. Expansion of the present exception for ocean-going sealed containers to include domestic container movements would result in additional trucks being permitted to exceed the legal gross weight limit by up to 15,000 lbs. As shown in Appendix 5, charts A-G, each additional truck carrying 15,000 lbs. more cargo causes 50% more wear to the pavement than a truck legally loaded to 80,000 lbs., even after

FINDINGS AND RECOMMENDATIONS

factoring in that the truck with additional cargo makes 23% fewer trips to transport the same amount of cargo as the truck loaded to legal weight.

5. The extent to which additional permitted overweight trucks would impact Florida's road construction and preservation costs depends on the number of trucks that would be eligible for overweight permits, the number of miles traveled by such trucks, and types of roads traveled. As to the number of trucks eligible, the Department estimated a maximum of 60,000 trucks. Using assumptions as to the number of trips made and number of miles traveled annually (10 trips at 100 miles each for a blanket permit, 1 trip at 100 miles for a trip permit), the Department estimated that the maximum overweight miles traveled under permit would be 1% of the total annual truck miles traveled in the state. It should be noted however, that 10 trips at 100 miles each may significantly underestimate the miles that would be traveled annually under blanket permits for domestic container movement. The Department felt that no substantial problem would exist in accommodating the proposed loads on the existing system.

Note: A draft report prepared by Transtec, Inc. of Austin, Texas, also evaluated the impact of expanded overweight permitting on highway preservation costs. This report used an engineering analysis different from that used by the Department and reached different conclusions.

6. There is currently a backlog of about 7,000 miles of Florida roads that are deficient from a structural standpoint (due to wheelpath rutting, cracking, etc.) and are in need of rehabilitation. At current funding levels, the Department will attain the statutory objective of a backlog of 5,020 lane miles of deficient roads by FY 1996/97.
7. The Department estimates that the consequence of replacing the 80,000 lb. tractor-semitrailer combination with a 95,000 lb. vehicle on a typical interstate or secondary road resurfacing project would be an additional 1/2 inch of asphalt at \$6,160 per lane mile.

FINDINGS AND RECOMMENDATIONS

Commission Conclusion: An exception from legal weight limits for non-maritime domestic container movements cannot be justified, since such movements do not involve intermodal transfer between ocean-going ships and trucks. Further, non-maritime container truck transportation does not involve the standard maritime business practice of shipping rates charged by volume, not by weight. In light of Florida's current backlog of deficient roads and limited funding to address those deficiencies, it is not in the state's best interest to allow more heavy truck movements on its highway system, absent unique circumstances that compel exceptions.

Commission Recommendation: That the current policy of issuing overweight permits up to 95,000 lbs. for containerized cargo movements in conjunction with maritime commerce *not* be expanded to non-maritime domestic container movements.

APPENDIX 1

Testimony Received at Public Hearings

Florida Trucking Association, by Mr. Tom Webb, President.

Florida Limerock and Aggregate Institute, by Mr. Gene Cowger, Engineer-Director.

Florida Citrus Mutual, by Mr. Dick Whalley, Vice President, Public Affairs.

Florida Farm Bureau Federation, by Mr. Doyle Parker, Transportation Advisory Committee.

Florida Forestry Association, by Mr. Carroll Lamb, Executive Vice President.

Florida Asphalt Contractors Association, by Mr. Don Sollie, President.

Florida Concrete and Products Association, by Mr. John F. Christensen, President.

Florida Power and Light Co., by Mr. Robert W. Schomber, Legislative and Regulatory Specialist.

Florida Department of Transportation, by Mr. Ben G. Watts, Secretary and Mr. Ken Morefield, State Highway Engineer.

Florida Seaport Transportation and Economic Development Council, written testimony only, submitted at request of Commission by Mr. Carmen J. Lunetta, Chairman; Mr. John LaCapra, General Counsel; and Ms. Nancy Leikauf, Director of Communications.

Note:

Transcripts of verbal testimony were requested for the record. In the few instances where a transcript was not submitted, audio and video tapes are available from the Commission office.

APPENDIX 2

Literature Reviewed

- AASHTO Subcommittee on Highway Transport (1984).
Our Highways. Why Do They Wear Out? Who Pays For Their Upkeep?
Washington, D.C.
- AASHTO Report (1993).
A Review of National Domestic Freight Policy. Washington, D.C.
- American Trucking Association (1989).
Oversize/Overweight Permits. Alexandria, Virginia.
- Byrd, Tallamy, MacDonald and Lewis, Consulting Engineers (1987).
Effect of Truck Weights on Deterioration, Operations, and Design of Bridges and Pavements. Falls Church, Virginia.
- Cowger, Eugene H., P.E., Florida Limerock and Aggregate Institute (1992).
Issue Paper: Legal Allowable Weight Imposed on a Highway by a Tandem Axle. Tallahassee, Florida.
- Federal Highway Administration (1993).
Overweight Vehicles - Penalties & Permits: An Inventory of State Practices for Fiscal Year 1991.
- Florida Department of Transportation (1988).
Trucking Manual. Tallahassee, Florida.
- Florida Department of Transportation (1988).
Florida Truck Weighing Operations, Fixed vs. Portable. Tallahassee, Fla.
- Florida Department of Transportation (1991).
Weigh Station Evasion by Trucks. Tallahassee, Florida.
- Louisiana Department of Transportation and Development (1992).
Louisiana Regulations for Trucks, Vehicles, and Loads.
- Muri, Wayne (1991).
"Paving The Way." Reprinted in *The Private Carrier*, August, 1991.

APPENDIX 2

Literature Reviewed (Continued)

- Small, Kenneth A., Clifford Winston, and Carol A. Evans (1989).
Road Work: A New Highway Pricing & Investment Policy. Washington, D.C.
- State of Florida; Office of the Auditor General (1991).
Performance Audit of the Vehicle Weight Program. Tallahassee, Florida.
- Transportation Research Board (1987).
Effects of Permits and Illegal Overloads on Pavements. Washington, D.C.
- Transportation Research Board; Committee for the Truck Weight Study (1990).
Truck Weight Limits: Issues and Options. Washington, D.C.
- Transportation Research Board; Committee for Truck Access Study (1989).
Providing Access For Large Trucks. Washington, D.C.
- Transportation Research Board (1987).
Transportation Economics: Issues and Impacts. Washington, D.C.
- Transportation Research Board (1989).
Truck Transportation and Safety Issues. Washington, D.C.
- Transportation Research Board (1990).
New Trucks for Greater Productivity and Less Road Wear. Washington, D.C.
- Transtec, Inc. (1993).
Preliminary Technical Evaluation of Potential Impact of Allowing Domestic Truck Movements of Overweight Containerized Loads on the Florida Pavement Network. Austin, Texas.
- United States General Accounting Office; Comptroller General (1979).
Excessive Truck Weight: An Expensive Burden We Can No Longer Support. Washington, D.C.
- Videotape: Center for Transportation Research, University of Texas (ca. 1990).
Texas Highways Have a Weight Problem. Narrated by Dr. Frank McCullough.
- Videotape: Federal Highway Administration (1988).
Truck Impacts on Pavement.

APPENDIX 3

Recommended Penalty Structure

Overweight Lbs.	Current Fine 5¢/lb. *	Recommended Penalty Structure	
		Overweight	Penalty ¢/lb.
		1 to 1,999 lbs.	10¢
		2,000 to 5,999 lbs.	12¢
		6,000 to 9,999 lbs.	15¢
		10,000 lbs. & over	20¢
Overweight Lbs.	Current Fine 5¢/lb. *	Recommended Fine	Recommended Over/(Under) Current
1,000	\$50	\$100	\$50
2,000	\$100	\$200	\$100
3,000	\$150	\$320	\$170
4,000	\$200	\$440	\$240
5,000	\$250	\$560	\$310
10,000	\$500	\$1,280	\$780
20,000	\$1,000	\$3,280	\$2,280
30,000	\$1,500	\$5,280	\$3,780
40,000	\$2,000	\$7,280	\$5,280
50,000	\$2,500	\$9,280	\$6,780
Total Dollars **	\$5,312,335	\$13,702,733	\$8,390,398

Note: * Because the first 1,000 lbs. of an axle weight violation are currently subject to a reduced fine of \$10 flat, fines for axle weight violations are \$40 less than current fine amounts shown.

** Compares total revenues collected from current fines for FY 1991/92 to total revenues estimated under recommended fines.

APPENDIX 4

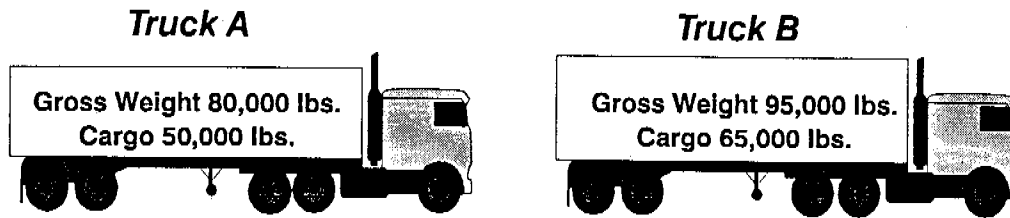
Overweight Permit Fee Schedule

	Trip Permit Fee		Blanket Permit Fee
	Previous Fee	Revised Fee (4/92)	
Up to 95,000 pounds	\$24	\$0.27/Mile	\$240
Up to 112,000 pounds	\$28	\$0.32/Mile	\$280
Up to 122,000 pounds	\$31	\$0.36/Mile	\$310
Up to 132,000 pounds	\$33	\$0.38/Mile	\$330
Up to 142,000 pounds	\$36	\$0.42/Mile	\$360
Up to 152,000 pounds	\$38	\$0.45/Mile	\$380
Over 152,000 pounds	\$.25 per 1,000 lbs. rounded to the nearest dollar	\$.003/1000 lbs./ Mile	Not Issued
Containerized Cargo Unit	\$24	\$0.27/Mile	\$500

APPENDIX 5

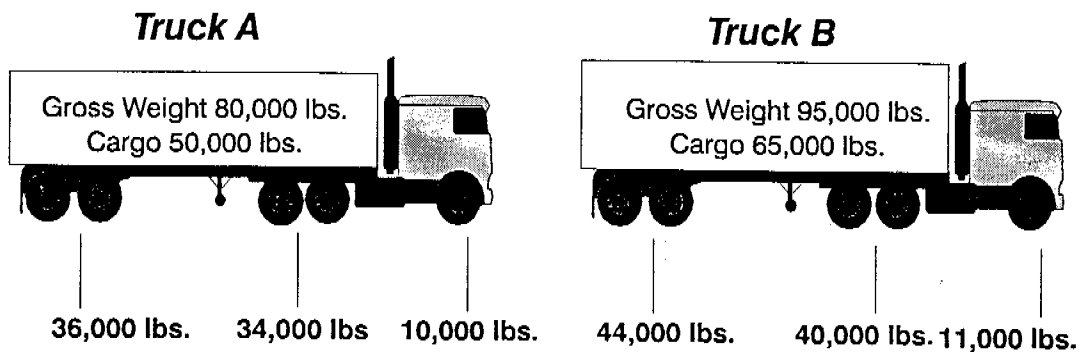
Comparison of Pavement Wear Impacts

Chart A



Trucks A & B are identical (dimensions, axle spacing), except Truck B has 15,000 lbs. more cargo than Truck A.

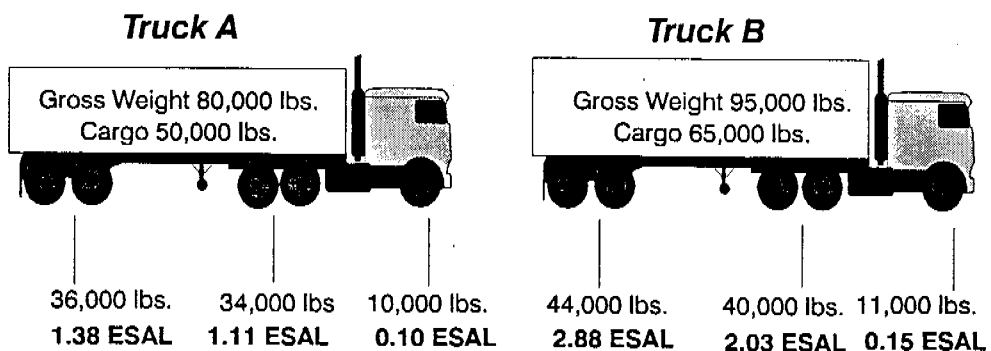
Chart B



This Chart shows the weight carried by each single and tandem axle for trucks A & B.

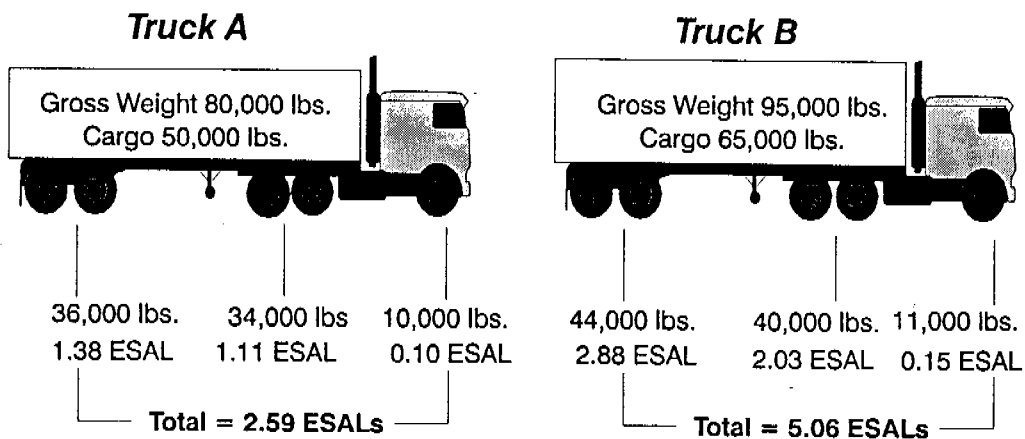
APPENDIX 5

Chart C



This Chart shows the effect of each axle load on the pavement. ESAL (Equivalent Standard Axle Load) is the relative measure of axle load effects on pavement wear. One (1) ESAL has the effect of a single 18,000 lb. axle.

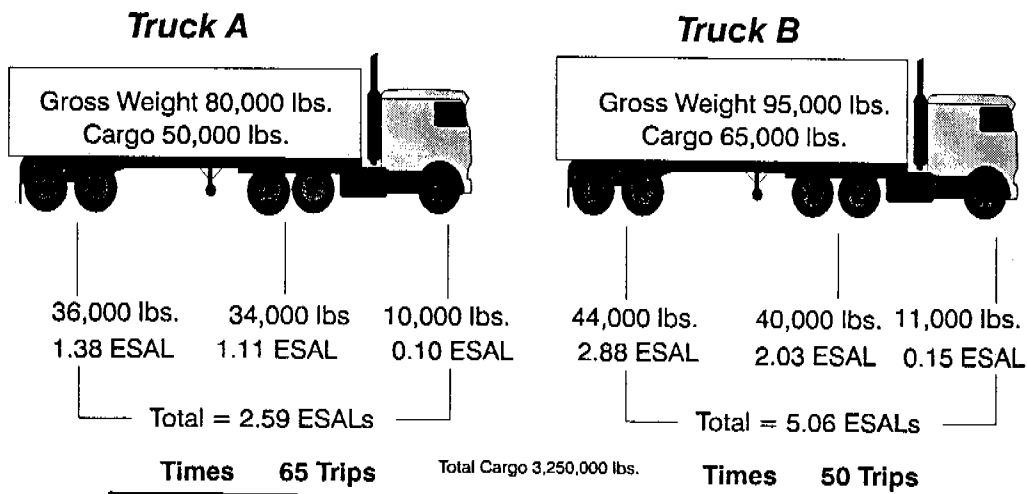
Chart D



This Chart shows that Truck B's effect on pavement wear is 95% greater than Truck A (Truck A = 2.59 ESALs, Truck B = 5.06 ESALs)

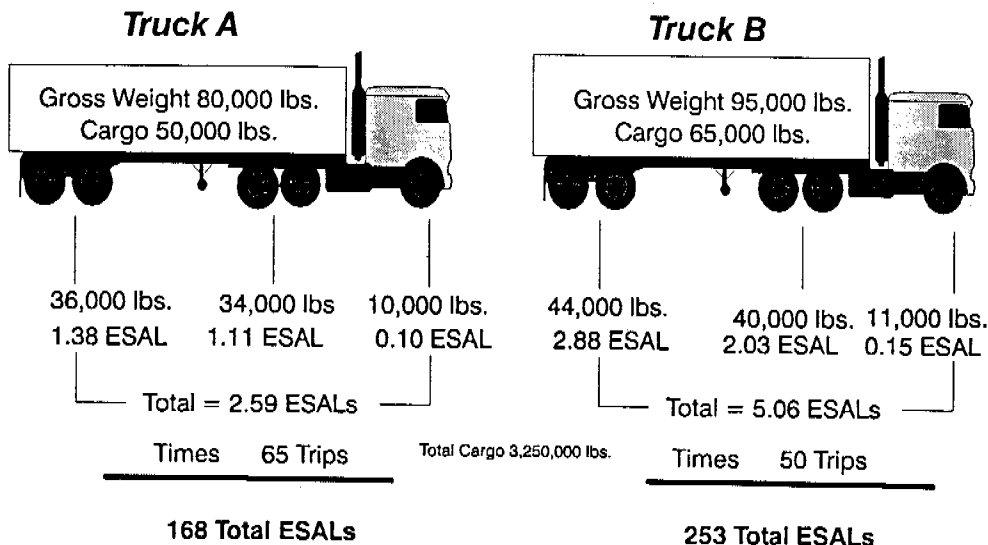
APPENDIX 5

Chart E



This Chart shows that to carry the same amount of cargo (3,250,000 lbs.) Truck B would make 23% fewer trips than Truck A (Truck A = 65 trips, Truck B = 50 trips).

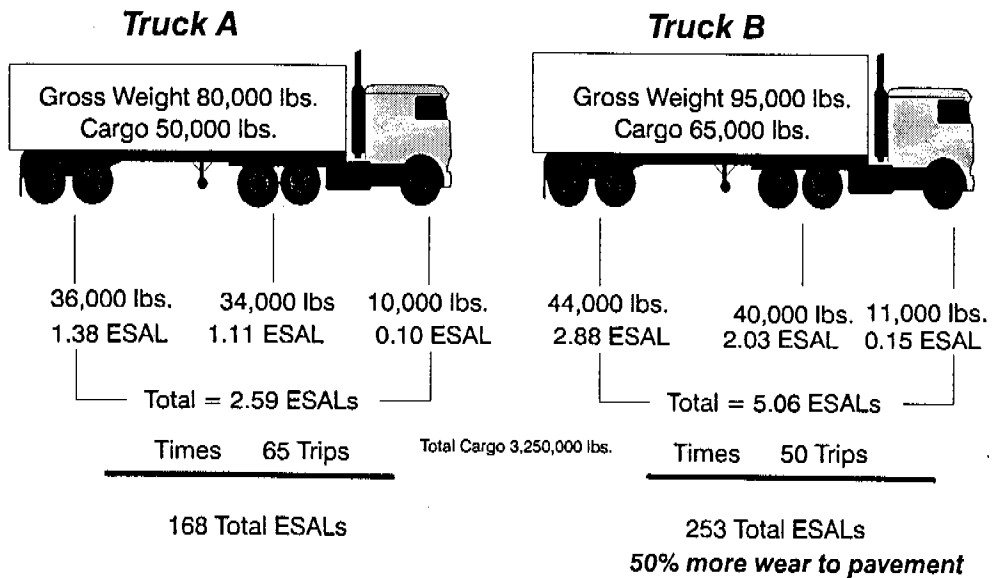
Chart F



By multiplying total ESALs of each truck (Truck A - 2.59 ESALs, Truck B - 5.06 ESALs) by the number of trips needed to carry the same total cargo (Truck A - 65 trips, Truck B - 50 trips), the total effect on pavement wear is determined.

APPENDIX 5

Chart G



Conclusion: Truck B, with a gross weight of 95,000 lbs., causes 50% more wear to the pavement than Truck A, with a gross weight of 80,000 lbs., even though Truck B makes 23% fewer trips.



The Florida
Transportation
Commission