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of Transportation

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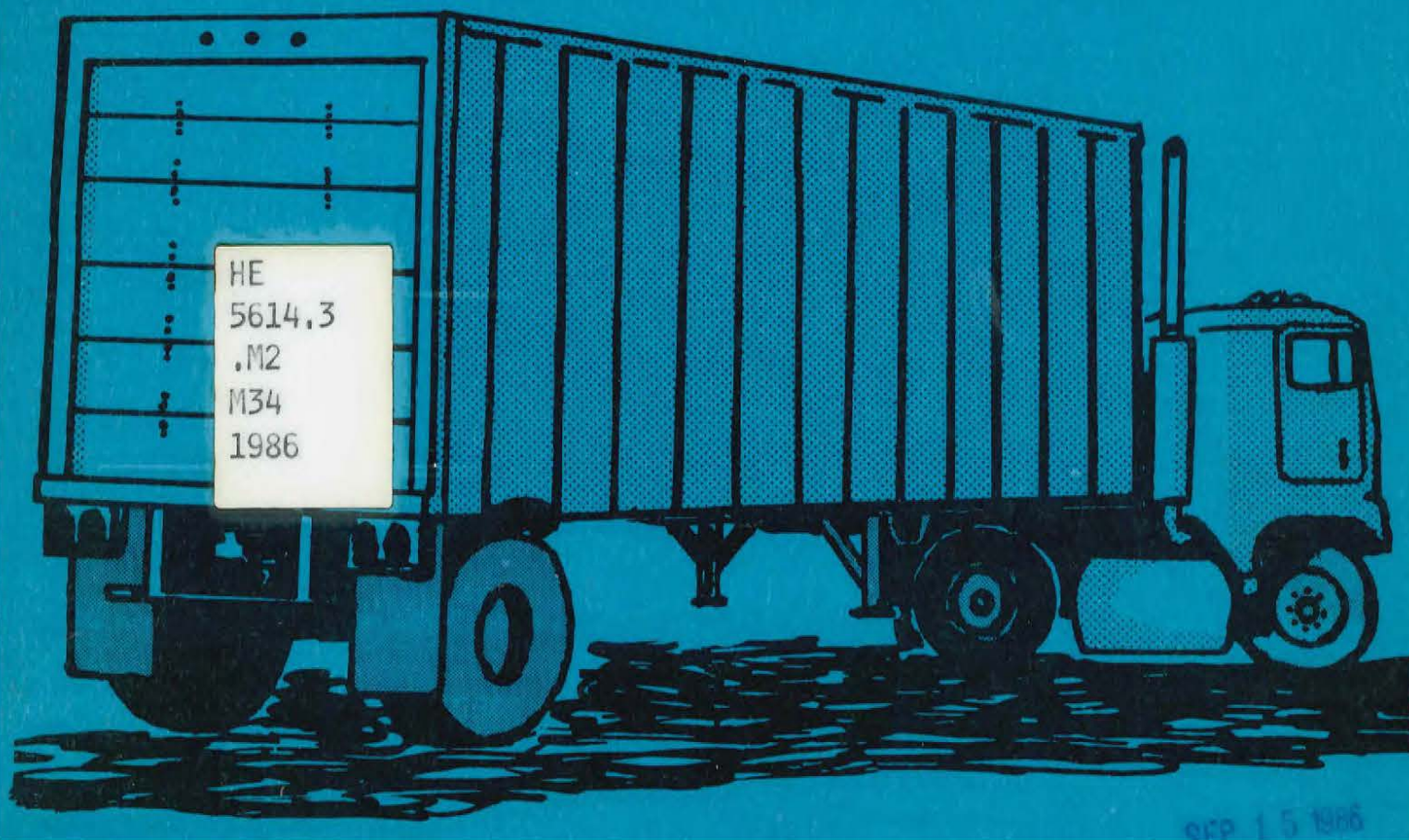
Final Report

of the

Truck Issues Advisory Committee

As required by Executive Order 2FY 85/86

Joseph E. Brennan, Governor



mdot

DANA F. CONNORS
Commissioner

March 4, 1986

The Honorable Joseph E. Brennan
Governor of the State of Maine
State House Station #1
Augusta, Maine 04333

Dear Governor Brennan:

I am pleased to submit the final report of the Truck Issues Advisory Committee pursuant to Executive Order 2FY 85/86.

The Truck Issues Advisory Committee met eight times over the past seven months to discuss many different topics relating to trucking. Principal issues centered around increasing productivity and reducing administrative burdens for the trucking industry, promoting safety on the highway, and protecting the public's investment in the highway system. The Advisory Committee provided useful and knowledgeable input into the study and served as positive critics of MDOT initiatives. I found the Advisory Committee concept most valuable as a means of fostering communication between the trucking industry and other highway users, and state government. I plan to continue the Advisory Committee in some form to monitor the implementation of the recommendations contained in this study, and to further the communication developed.

It would be my recommendation that legislation to implement the findings of this study be submitted to this session of the Legislature. I believe that the findings and recommendations contained in this report fairly and equitably balance the interests of the trucking industry and other highway users, and will serve to enhance productivity and safety, while protecting the public's investment in the highway system.

March 4, 1986

Last, I would like to thank the members of the Advisory Committee for their outstanding work on behalf of the people of the State. Their dedication to the study effort assured that a high quality product was produced.

Sincerely,



Dana F. Connors
Commissioner

DFC:jg

cc: Pres. Charles Pray
Speaker John Martin
Members, Joint Standing Committee
on Transportation

Summary of Findings and Recommendations

ADMINISTRATION

- . Support entry into the International Registration Plan
- . Support expansion of the Regional Fuel Tax Agreement
- . Increase threshold weight for fuel use reporting
- . Support the formation of operating authority compacts
- . Adjust registration brackets
- . Develop exception reporting for annual licenses
- . Explore unified dates for licenses and indicia
- . Reconsider the Single Point Contact plan
- . Submit annual report on progress

IMPROVING TRUCKING PRODUCTIVITY

- . Increase overall vehicle length to 65 feet
- . Legislate 48 foot semitrailers
- . Develop an experimental vehicle policy
- . Develop a haulroad program
- . Explore development of a distributional formula to permit higher gross weight
- . Encourage greater use of the 6-axle combination in the forest products industry

IMPROVING SAFETY

- . Increase safety checks
- . Study the out-of-service vehicle problem
- . Explore the possibility of a terminal inspection program or other initiatives
- . Support a national drivers license
- . Gather more data on commercial vehicle accidents

PROTECTION OF THE HIGHWAY SYSTEM

- . Increase size and weight enforcement
- . Remove the fine cap on overweight violations
- . Moderate fines for minor overloads
- . Increase penalties for violations of posted bridge height
- . Establish fine schedule for violation of posted bridge weight
- . Where appropriate, post bridges for one truck; other limits
- . Establish an underregistration fine schedule
- . Study the incidence of repeat violators and make recommendations
- . Restrict and reduce the allowable triaxle weight for the forest products four axle single unit truck

TRUCK ISSUES STUDY

INTRODUCTION

Maine's system of highways and bridges represents both an opportunity to be used, and an investment to be protected. The highway system provides the principal mode of transportation for goods and people in this State, and is essential for industries ranging from tourism to forest products.

With an annual budget approaching \$200M, the Department of Transportation is the lead agency for providing and maintaining the highway infrastructure. It is responsible for approximately 8700 miles of highways and 3000 bridges. In addition, towns are responsible for approximately 13,200 miles of townways as well as about 1,000 local bridges. Much of this system is relatively old; many townways and some State Aid highways were never formally designed or were designed for much lighter traffic, and many of the State's bridges were built prior to World War II. Given the ever increasing costs of capital improvements, expected cuts in federal highway fund revenues, and predicted declines in fuel tax receipts, it is imperative that the State seek new ways to protect and extend its system of highways and bridges. To do otherwise will result in a rapid disinvestment in the highway system and an irretrievable loss to Maine's citizens.

The trucking industry is in a period of transition and painful adjustment. The deregulation of the industry that began in 1980 apparently resulted in excess trucking capacity nationally. Further, the Surface Transportation Assistance Act of 1982 authorized more productive vehicles which in turn increased trucking capacity. These increases in available trucking, combined with a fundamental shift in the United States economy away from heavy industry and toward a service based economy, have resulted in a decrease in tonnage to be hauled at the same time productivity is increasing. Add to this the recession of the early 1980's and its concomitant fitful recovery, high real interest rates, the high U.S. dollar, and Canadian competition brought on by a depressed Canadian dollar and alleged government subsidies, and some of the problems faced by the trucking industry can begin to become apparent. The result has been increasing competition for shrinking tonnage, and a general decrease in profitability for the trucking industry as a whole. Many established trucking companies have either severely reduced their operating budgets or have gone out of business altogether. The recent insurance crisis has exasperated the problem further. Nonetheless, the trucking industry remains the only means of moving goods quickly and with flexibility, especially within a region or state.

The trucking industry is perhaps the ultimate highway user. Highways and bridges are designed both for the number and type of heavy traffic that are expected over their lives. Highways are designed for the sum of equivalent standard axle loads expected over design life. In addition, highways must be designed for the geometrics necessary to accommodate larger vehicles. Longer bridges are designed to withstand a heavy gross load, but the length restriction of shorter bridges makes their critical operational stress a function of the heaviest axle load group on the highway. Certainly other highway users influence the design of the highway system, usually by virtue of sheer numbers; however, these users usually do not establish the boundary conditions. It is to the benefit of both the trucking industry and the State to work together to develop a highway system that meets industry's needs while protecting the interests of all highway users.

PURPOSE

On August 9, 1985, Governor Joseph E. Brennan signed an Executive Order directing the Department of Transportation to conduct a study relating to truck size and weight, vehicle configurations, overweight fines and the economic use of the highway system. An Advisory Committee, consisting of truckers, legislators, government officials, and public members, was named by the Governor to assist the Department of Transportation. The study was directed in part because of the general confusion surrounding Maine's truck size and weight laws, and overweight fine policies. Conflicting legislation had been introduced in the First Session of the 112th Legislature dealing with overweight fines. It was agreed that all legislation would be withdrawn in order that the facts necessary to foster good public policy could be developed. The goals of the study were expanded by Executive Order to include developing recommendations relating not only to vehicle size and weight and overweight fines, but also to consider easing administrative burdens on the trucking industry, encouraging more productivity, and promoting highway safety. A series of working papers on these topics was developed, and is available from the Department of Transportation.

The Advisory Committee met seven times. There were frank and open discussions on relevant topics between the Committee and the Department, and among committee members as well. In addition, interested parties were invited to attend all meetings, and numerous telephone contacts were made. The Advisory Committee provided the Department of Transportation with both useful information and relevant feedback. A record of all Advisory Committee meetings has been maintained, and is available from the Department of Transportation. The Advisory Committee concept should probably be retained in some form to help implement and evaluate some of the recommendations contained in this report.

GENERAL FINDINGS

The following is a synopsis of the principal findings developed as a part of the Advisory Committee meetings. A more thorough discussion is presented in the series of working papers maintained by MDOT.

Truck weights - Maine's axle weight limits are some of the most liberal in the country. This is especially true of the special tolerance limits permitted for certain commodities. Maine's gross weight limits are about in line with national standards except that short single unit trucks are generally allowed more gross weight than is usual elsewhere. Maine's truck weight limits have evolved over time and will undoubtedly continue to be adjusted as is necessary and prudent.

Taxes - Maine's highway use taxes for trucks are less than the national average, and only slightly above average for the region. Taxes on trucking not related to the use of the highway system significantly increase the level of taxation on Maine trucking.

Impacts on Pavements - Pavements are not designed for a maximum gross load, but rather are designed to carry a particular number of axle loads over their lifetimes. Pavement life is measured in terms of equivalent standard axle loads (ESAL). One ESAL equals 18,000 pounds on a single axle, and all other axle loads can be expressed in terms of ESAL's.

When designing a highway, design engineers literally add up the ESAL's expected over the highway's design life. Once the ESAL's are determined, the pavement thickness can be calculated. Total ESAL's are developed through the use of traffic counts and surveys, Weigh-in-Motion, and other traffic estimation techniques. Both the amount and type of traffic is important. It is especially important to know the number of heavy trucks. Highway departments expend considerable resources to obtain accurate data on truck counts and truck weights, because highway users cannot afford to have highways that are either underdesigned or overdesigned. Underdesigned highways wear out too soon, and overdesigned highways are too expensive to build in the first place. Either event translates into higher user costs.

On most highways, the vast majority of ESAL's are contributed by truck traffic. ESAL's increase as a fourth power function with respect to axle weight. That is, small increases in axle weight cause a considerable increase in highway consumption. For example, increasing a single axle from 18,000 pounds to 20,000 pounds results in a weight increase of about 11 percent ($20/18 = 1.11$ percent). Damage, however, increases by about 50 percent. ($20^4/18^4 = 160,000/105,000 = 1.52 = 52\%$). It should be noted that this

relationship, besides being grounded in basic physics, was developed fully by the AASHTO road tests conducted at Ottawa, Illinois. The results of the AASHTO road tests have been refined over the years, but the basic findings have never been seriously challenged.

The AASHTO road test formulas are valid for single and tandem axles. In addition, an extension for tridem axles was recently established by AASHTO. Essentially, one ESAL equals 18,000 pounds on a single axle, nearly 34,000 pounds on a tandem, and 42,000 pounds on a tridem axle. Appendix C shows the relationship of axle weights to ESAL's.

Illegal axle overloads cause rapid increases in ESAL application and, hence, pavement consumption. For example, increasing the tandem axle weight from the road limit of 38,000 pounds to 55,100 pounds (45% over) causes four times as many ESAL's. That is, pavement is consumed four times as fast, while axle weight increases by only 45 percent. This cost is passed on to all highway users in the form of either increased user fees, or poorer highways. The passage of one truck per day, overloaded by 45 percent, can decrease the useful life of lower type highways by one or two years.

Available evidence shows a general pattern of poor load distribution among the axles of a tridem unit. Such unbalance will increase pavement damage greatly but not materially affect bridge stress. Unbalance of load between drive and trailer axles of combination units exists to a lesser extent. This is destructive to both pavements and bridges.

Impacts on Bridges - Unlike pavements, bridges are designed primarily to carry gross loads for an indefinite period, but ordinarily useful life is specified from 50 to 100 years. Gross loads control except in the case of short bridges and long trucks where it is physically impossible to put the entire truck on the bridge at once. In these cases, the weight of the heaviest axle group is the most significant factor. The majority of Maine bridges are composed of short spans.

Bridges are designed to react elastically under a load. The members of the bridges bend under the load and recover. The amount of bending is directly proportional to the weight of the load (so long as the elastic limit is not exceeded). That is, an 80,000 lb. gross load causes twice the stress as does a 40,000 lb. gross load with the same distribution.

Bridges are designed to carry a specific gross load. Since it is impossible to design bridges for all possible loads and vehicle types, a design vehicle is used to represent all vehicle types. Prior to about 1955, the standard design vehicle was a 15 ton single unit truck with 24,000 lbs. on the rear axles (H15). About 60 percent of Maine's bridges were designed to this or a lower standard.

After 1955, the design vehicle became a 36 ton combination vehicle (HS20). The increase in the size of the design vehicle reflected the general increase in the size of vehicles. The HS20 design vehicle was the standard in Maine until about 1979. Maine then became one of the few states to design for the HS25 design vehicle. The HS25 design vehicle is a 45 ton combination vehicle.

Bridges are designed in such a manner that the stress caused by the design vehicle equals 55 percent of yield point. Stresses in excess of the design limits dramatically shorten the life of the structure, although occasional stresses of up to 75 percent may be allowed under overload permit conditions. On a moderately short span relatively modern H15 bridge, a legally loaded four axle forest products single unit with 64,000 lbs. on the triaxle unit may cause a stress equal to over 80 percent of yield strength. Actual stress ratios vary with the span of the bridge and may be either better or worse than the example noted, but will generally become more severe as the age of a bridge increases. Spreading out the load will reduce the impact of heavy loads on bridges, especially on short and intermediate length bridges. Where conditions allow, posting bridges for one truck at a time and lower speeds can also reduce the damage.

Impacts on Safety - Promoting highway safety is of the utmost importance to the trucking industry and the state. There is national movement toward encouraging safer drivers, safer vehicles, and safer highways. Changing technology is being enlisted in this effort. Computerization, compacts, safety alliances, and national databases are being developed to combat such problems as driver fatigue and defective vehicles.

Impacts on other industries - While many different Maine industries are dependent upon the availability of transportation, few industries are particularly sensitive to the cost of transportation. One notable exception is the potato industry where the cost of transportation can represent up to fifty percent of the value of the product. Hindrances to the availability of transportation should be reduced. Hindrances include retaliatory taxes, unnecessarily burdensome fuel use reporting, and other tax and administrative procedures that serve to discourage out-of-state trucks from coming to Maine. Registration, fuel, and operating compacts, preferably combined into unified compacts, should be encouraged.

Impacts on the trucking industry - Segments of the trucking industry often allege that taxes represent a significant impact. Highway use taxes, in general, while amounting to up to several thousand dollars per vehicle, represent less than 10 percent of total operating and ownership costs. The cost of vehicles, maintenance, labor, and fuel are all more significant than are highway use taxes.

Perhaps a more significant cost to the trucking industry is the cost of overloading. Overloading greatly reduces the life of the highway system resulting in increased taxes and poorer serviceability which, in turn, increases capital and operating costs. The act of overloading also provides the operator who chooses to operate illegally with an unfair economic advantage at the expense of the legal operator. The result is a general depression in the price of transportation, and further incentives to overload.

Truck configuration opportunities - One of the major charges of the study was to explore alternate vehicle configurations. Members of the Advisory Committee and other knowledgeable people offered many suggestions. MDOT has developed computer programs to quickly analyze any configuration with respect to pavement consumption and bridge stress.

Any alternate vehicle configuration should meet several tests. It must be productive for the trucking industry. It must not have any more impact on pavement or bridges than the configuration it is supposed to supplant. It must not adversely impact safety when operated in a traffic stream, and it must not have a severe impact on highway geometrics. Combination vehicles are expected to be almost always preferable to single unit trucks. Because they are longer than single unit trucks, combinations distribute the load better and provide an opportunity for more axles. While the Department of Transportation evaluated many different configurations and axle loadings, no specific recommendations are made at this time. One combination which consisted of a four axle single unit truck and a tandem axle semitrailer shows promise but the safety and practicality of its operation are not yet established. Other configurations cannot be precluded.

One of the very real results of the Truck Issues Study effort was an improvement in the communication between the various aspects of the trucking industry and State Government, in general, and the Department of Transportation, in particular. MDOT and other state agencies were provided an opportunity to listen to the problems, concerns, and ideas of the trucking industry and to respond where appropriate. The industry, in turn, had an opportunity to learn about some of MDOT's and others concerns with respect to highway and bridge consumption, safety, and the commercial vehicle regulation. The experience was to the advantage of all.

The Department of Transportation should annually submit a report to the Governor and the Transportation Committee outlining progress on the recommendations contained in this report. The report should include progress on obtaining all administrative, productivity, and safety goals as well as goals relating to the protection of the highway investment. Input should be obtained from the trucking industry and from other relevant state agencies.

Summary of Findings and Recommendations

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- . Support expansion of the Regional Fuel Tax Agreement
- . Increase threshold weight for fuel use reporting
- . Support the formation of operating authority compacts
- . Adjust registration brackets
- . Develop exception reporting for annual licenses
- . Explore unified dates for licenses and indicia
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- . Encourage greater use of the 6-axle combination in the forest products industry

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- . Increase safety checks
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Findings and Recommendations

With the assistance of the Truck Issues Advisory Committee, the Department of Transportation has developed recommendations to protect pavements and bridges, improve productivity and reduce administrative burdens for the trucking industry, promote safety, and to develop alternate vehicle configurations. While the Department of Transportation provided the study staff and support, these conclusions can be considered the recommendation of the Committee. Recommendations are made for legislation, regulation and for state or industry support for the attainment of desirable regional or national goals. A single comprehensive bill has been drafted to accomplish all desirable legislative changes except for those related to the International Registration Plan (IRP) and Heavy Vehicle Use Tax (HVUT). Urgency attached to these two matters, together with extensive preparations or public discussion, caused early and separate submission.

Reducing Administrative burdens on the trucking industry

The trucking industry is faced with a wide array of administrative burdens imposed by government. Included are various licensing and tax reporting requirements, and safety inspections. While these requirements may be entirely rational within a given state, trucking is often an interstate business. The multiplicity of laws and rules, and the resulting licenses, stickers and other indicia are cumbersome and expensive to acquire and maintain. At the same time, the state must be able to provide for highway safety, raise the necessary revenue for highway construction and maintenance, protect its highway system against premature consumption, and advance its economic wellbeing. Recommendations in this area follow.

SUPPORT ENTRY INTO THE INTERNATIONAL REGISTRATION PLAN (IRP).

The IRP is a registration prorated plan administered on the base state approach. Currently 33 states and one Canadian province are members, and several other states may soon join. In the IRP, a trucker must only contact his home jurisdiction for the necessary registration credentials to operate in any IRP jurisdiction. One fee is paid, and one license plate is issued. The registration fee is based upon the percentage of mileage to be travelled in each IRP jurisdiction.

The advantages of the IRP are several. There is an equitable sharing of registration fees among states. There are reduced administrative burdens on the trucking industry, and a trucker enjoys full intrastate registration rights in all IRP jurisdictions for which he has declared mileage. The trucking industry is able to make better, more efficient use of its equipment, and the availability of trucking is generally increased.

Expansion of the IRP is supported by the American Trucking Association, the Private Truck Council of America and other national trucking organizations. In addition, the working committee of the National Governors Association has endorsed expansion of the IRP as well. The Truck Issues Advisory Committee strongly endorsed Maine's entry into the IRP. The Division of Motor Vehicle's fiscal impact statement indicates that Maine will not be adversely affected by entry. Enabling legislation has been submitted to permit Maine's early entry into the IRP.

SUPPORT EXPANSION OF THE REGIONAL FUEL TAX AGREEMENT, AND EXPLORE MERGER WITH THE INTERNATIONAL FUEL TAX AGREEMENT

The Regional Fuel Tax Agreement is a base state fuel tax compact with Maine, Vermont, and New Hampshire as its members. It is based on many of the same principles as the IRP, and serves as a national model.

The International Fuel Tax Agreement is also a three state fuel tax compact, and it too is modeled on the IRP concept. Its members are Arizona, Iowa, and Washington. While IFTA predates RFTA, the latter has many more accounts. The IFTA members are non-contiguous. Under the auspices of the National Governors Association talks have been held between members of RFTA and IFTA to explore a possible merger. While some differences exist between the two compacts, the state representatives agree that these differences do not seem to be insurmountable.

The Truck Issues Advisory Committee strongly endorsed the expansion of RFTA, and the exploration of a merger with IFTA. MDOT also suggests that the ultimate goal should be a national fuel tax compact associated with the IRP. Such a unified fuel-registration compact could feature one identification device, a unified audit, and a minimum of reporting. Appropriate Maine officials should actively pursue the expansion of RFTA.

INCREASE THE THRESHOLD WEIGHT FOR FUEL USE TAX REPORTING TO MORE THAN 26,000 POUNDS GVW

Maine's thresholds for fuel tax reporting are 18,000 pounds for gasoline and 7000 pounds for all other fuels. It is generally agreed that these thresholds are too low. The purpose of fuel tax reporting is to capture use taxes from interstate trucks. Requiring fuel use reporting for trucks that are essentially in intrastate operation, and for which fuel is primarily bought at the pump causes an increasing burden on the trucking industry, and clogs fuel tax administration. Since the IRP accepts vehicles with GVW's of greater than 26,000 pounds, this weight is recommended as the threshold for all fuel reporting. This proposal had good Advisory Committee support, but its implementation should be coordinated with other RFTA members. Appropriate Maine officials should actively participate in the determination of related costs and benefits with other interested states and in the development of appropriate legislation and administrative procedures.

SUPPORT NATIONAL EFFORTS TO FORM OPERATING AUTHORITY COMPACTS

Many states, including Maine, issue operating authority to for-hire carriers. The principal reasons today for this type of regulation are to insure that proper levels of insurance are maintained, and an agent is available for service of process. The issuance of operating authority has also been used as a means of economic regulation, but this practice is much less prevalent today.

When applying for operating authority in different states, truckers are required to submit the same basic information many times. In addition, there are usually fees associated with the issuance.

Currently, there are several different proposals relating to developing operating authority compacts. There are three possible approaches: the base state approach similar to the IRP; centralization into a national file; and an approach that combines the two. Centralization, supported by the National Association of Public Utility Commissioners, would offer certain advantages to insurance companies.

The base state approach has the support of most of the trucking industry, and has the advantage of being easily merged with or being able to compatibly coexist with the IRP and appears to be the best solution. The most feasible and advantageous approach has not yet emerged. It is apparent, however, that the present system does not work well. The appropriate officials should cooperate with officials from other states in an organized effort to make a compact an early reality.

ADJUST REGISTRATION BRACKETS TO CONFORM WITH VEHICLE ROAD LIMITS AND OTHER RELEVANT LIMITS

The steps in Maine's current vehicle registration schedule do not conform well with the road limits for the various vehicle classes. For example, the road limit for a three axle truck is 54,000 lbs.; the registration bracket that encompasses this limit extends to 55,000 lbs. Similarly, the bracket that encompasses the four axle road limit of 69,000 lbs. ends at 70,550 lbs. In addition, various other limits relating to state tax reporting, commercial licenses, and the federal Heavy Vehicle Use Tax (HVUT) fall in the middle of brackets. The result is confusion and bad feelings on the parts of both the industry and issuing officials. With respect to the HVUT, the higher brackets can force unnecessary or higher federal tax payments as the tax is based on registered gross weight, not actual operating weight. The most immediate effect is to make many owners of three axle trucks liable for the HVUT which has a threshold of 55,000 lbs, even though the road limit for these vehicles is 54,000 lbs.

The Truck Issues Advisory Committee strongly endorsed adjusting the registration schedule to take into account relevant limits. The Department of Transportation in conjunction with the Division of Motor Vehicles has developed legislation containing a revised schedule that is as revenue neutral as practically possible for total registration revenue and that will adversely or favorably impact relatively few truckers.

EXCEPTION REPORTING

Currently, truckers are required to submit to state agencies many types of information on an annual basis. Often this information does not change. It is recommended that methods of reporting be developed that consider only changes in status. The Division of Motor Vehicles is using this method of reporting for registration, but complete applications must be submitted annually for fuel tax licensing and operating authority. Appropriate state officials should develop systems for exception reporting with a near term goal for attainment.

UNIFIED REPORTING DATES

Currently, commercial registrations are issued on a staggered basis. Under the IRP, however, there will be a fixed registration year. Both fuel use licenses and operating authority are issued on an annual basis but the expiration dates are different. The trucking industry has suggested that it would reduce their administrative burden if all relevant documentation expired on the same date. State agencies are concerned, however, that such a requirement would create peak and valley workloads that would adversely affect staffing. Nonetheless, this suggestion would seem to have enough merit to warrant its serious consideration. It is recommended that a unified expiration date be explored as an intermediate range goal.

SINGLE POINT CONTACT

Developing a single point of contact for trucking taxation and regulation has been discussed in Maine for several years. Most notably, a major feasibility study was conducted in 1982. The study committee included legislators, truckers, the Commissioners of Transportation, Finance and Administration, Public Safety, and the Secretary of State. The Study Committee recommended that truck taxation and regulation be centralized in the Division of Motor Vehicles, but that recommendation was never fulfilled. The Committee's recommendations are contained in a report entitled "Motor Carrier Permitting in Maine" January 1983, which is available from MDOT.

The current system brings more than poor service and frustration to the trucking industry. The duplication of effort results in poor data bases upon which to evaluate programs, and added costs to taxpayers. The data base limitations result in a lack of information for highway and bridge program development, tax revenue estimation, safety programs, and for evaluating size and weight limits.

The goal of a single contact point for truck taxation and regulation should be pursued. Further, it is recommended that the Department of Transportation, with the assistance of the Division of Motor Vehicles, the Bureau of Public Safety, and the Department of Finance and Administration be charged with developing a workable plan in this area. That plan should be based on the findings of the Feasibility Study that was conducted in 1982. The trucking industry should be consulted as to the practicality or the defects of any plan. The plan should incorporate exception reporting, unified expiration dates, and result in a functional computerized database. Annual reports of progress toward this goal should be submitted to the Legislature and Executive office each January.

Improving the Productivity of the Trucking Industry

Most of the recommendations in the section on reducing administrative burdens affect trucker productivity, either directly or indirectly. Certainly, the IRP and expanded fuel tax compacts offer the potential for significant gains. Recommendations in this section deal primarily with the use of vehicles.

INCREASE OVERALL VEHICLE LENGTH TO SIXTY-FIVE FEET; LEGISLATE 48 FOOT SEMITRAILERS

The Surface Transportation Assistance Act (STAA) of 1982 required that states permit, on a designated system, semitrailers of at least 48 feet in length, and prohibited an overall limit on vehicle length. In Maine, the designated system is limited almost exclusively to the Interstate system and the Maine Turnpike.

Off the designated system, combination vehicles in Maine are limited to an overall length of 60 feet. Semitrailers are limited to an overall length of 45 feet, except that semitrailers of lengths greater than 45 feet but not more than 48 feet are permitted by MDOT rule, provided that the distance between the centers of principal axle groups does not exceed 38 feet. Configured in this manner, the operating characteristics are essentially the same as those of a conventional tractor-semitrailer combination.

It is very difficult to take advantage of the rule permitting 48 foot semitrailers and still stay within the overall vehicle limit of 60 feet. MDOT believes that overall vehicle length can be increased to 65 feet and the maximum semitrailer length can be increased to 48 feet without adversely affecting safety or highway geometrics so long as axle spacings are controlled as indicated above. These changes will permit the trucking industry to take further advantage of the newer, more productive vehicles permitted under the STAA. The majority of the Advisory Committee was supportive of these increases. A minority expressed concerns about possible negative impacts on safety. Legislation is being prepared to implement this recommendation.

EXPERIMENTAL VEHICLES

MDOT and the Truck Issues Advisory Committee explored several proposals for alternative vehicle configurations. It was generally agreed that with respect to productivity, safety, and reduced bridge and pavement consumption combination vehicles are preferable to single units. Unfortunately, due to Maine's terrain, and for other reasons, single unit trucks have been the only viable alternative so far developed for many operations.

The trucking industry expressed an interest in alternative configurations. It was generally agreed that it would be far wiser to allow the trucking industry to evaluate promising configurations on a controlled in-service experimental basis than to legitimize untried alternatives hastily. Accordingly, it is recommended that the Commissioner of Transportation, with the advice of the Commissioner of Public Safety and the Director of Motor Vehicles, be permitted to authorize experimental vehicle configurations on a limited and individual basis. The actual operation of any experimental vehicles should be carried out by industry who would in turn agree to formally evaluate vehicles with respect to productivity and practicality. The Department of Transportation should evaluate the experimental vehicles with respect to pavement consumption, bridge stress, and highway geometrics. Evaluation with respect to safety should be a joint state-industry effort. A legislative resolve has been prepared to facilitate this recommendation.

HAUL ROADS

As a result of a preliminary study conducted by MDOT, it is apparent that there is a subsystem of highways that is subject to concentrated truck traffic. It is also apparent that much of this subsystem is used heavily by single industries, most notably the forest products industry. It is also clear that the location of these subsystems changes over time.

MDOT and the trucking industry should work together to fully identify and predict the haulroads network. The purpose of this identification would be twofold. First, to avoid putting inadequate resources into a road soon to be subject to heavy hauling. This is an imperative short range goal designed to avoid the waste of public funds. Second, MDOT and the trucking industry should work together to fund a system of roads that will be subjected to heavy trucking over a long period. The objective could be to put more resources into that network which in turn would permit both greater serviceability and higher weight limits on that system. Financial resources beyond those which are normal and average on similar roads could be generated by a specific levy on the heavy vehicles using the system. The forest products trucking industry expressed a great deal of interest in this idea, and MDOT feels that it is in the best interest of all highway users to pursue the concept. It should be noted that haulroad programs seem to have worked well in other states, most notably in Kentucky which has a very effective coal haulroads program.

PERMIT HIGHER GROSS WEIGHTS CONTROLLED BY A DISTRIBUTIONAL FORMULA

Pavements are consumed by the application of axles and the consumption increases exponentially with axle weight. Bridges are jeopardized by compact gross loads, or in the case of short bridges, axle group loads. With respect to highways and bridges it should be possible to permit higher gross loads provided those loads are well distributed. Good distribution is obtained by judiciously lengthening vehicles and by adding more axles.

On the interstate system gross loads are controlled by the Bridge Formula, a distributional formula that rewards both greater length and more axles. The maximum gross weight on the interstate is, however, capped at 80,000 pounds, and axle weights are strictly controlled. The possibility of replacing the Bridge Formula with another distributional formula is currently being studied at the national level. A revision may include lifting the 80,000 pound cap.

At the state level, there is no distributional formula comparable to the Bridge Formula. There is a crude distributional formula that is applied only to four or more axle combinations. There would be great advantage to both the trucking industry and the highway system if there were a single distributional formula that applied to both the interstate and non-interstate systems. Such a formula might be used to permit gross loads in excess of 80,000 pounds. If the Federal Bridge Formula is replaced with a distributional formula that is more liberal, Maine should consider its adoption for non-interstate highways. If the federal Bridge Formula is not replaced, Maine should consider developing its own formula for non-Interstate highways and bridges that both protects the highway system from abuse and permits greater productivity. Any effort in this area should be coordinated with the other northern New England states in a regional strategy.

The long range goal should be a single set of weight limits applicable to all vehicles without regard to system or commodity. The present tripartite system is inequitable, confusing, discourages productivity, encourages disrespect of legal weight limits and is economically inefficient. It will not be easy to develop a common set of weight limits or even to make significant progress toward that goal because present positions by various interests will have to be substantially changed. Any solution must seriously consider both the costs imposed on the system and on its users. This matter should continue to be actively studied.

ENCOURAGE GREATER USE OF THE SIX AXLE COMBINATION

Since its introduction as a practical vehicle in 1983 the six axle combination vehicle has proved very popular in the forest products and other industries. This vehicle is both more productive and less damaging than single unit trucks when operating at the commodity permit tolerance limit and its use should be encouraged.

Accordingly, it is recommended that the commodity permit fee for this combination be reduced from \$216 per year to \$108 for a period of two years to encourage conversion. This reduction should become effective January 1, 1987. Legislation includes this recommendation.

Improving Safety

The Truck Issues Advisory Committee and MDOT were particularly sensitive to the issue of safety. Many ideas were discussed, and recommendations made. Nationally, truck safety is at the forefront within the trucking industry, in Congress, and in the administration. The concerns have been spurred by an increase in truck-related accidents, unprecedented increases in insurance costs, and the fact that nationally some forty percent of trucks inspected are put out of service for various defects or irregularities. By far, the largest single defect found is faulty brakes.

Unfortunately, many of the ideas explored by the Advisory Committee are not amenable to state action. Maine should, however, lend its support to various national efforts including efforts to standardize manufacturers ratings of vehicle components to be used to control individual vehicle axle and gross weight limits. This would improve the structural integrity of commercial vehicles. Also, time stamping of invoices, fuel receipts or similar methods to help control speeding and drivers operating over allowable hours of service should be pursued at the national level. This would help improve driver safety.

INCREASE SAFETY CHECKS BY THE STATE POLICE

During the last quarter for which statistics are available the State Police Traffic Division conducted over 850 commercial vehicle inspections. Between 40 and 50 percent of these vehicles were put out of service. Over 2100 brake defects were discovered among the 850 inspections.

More resources should be put into safety inspections by the Bureau of State Police. Currently, the commercial vehicle enforcement unit (CVEU) of the State Police has ten officers assigned to weight enforcement. Of these ten officers, one works full time on hazardous materials. In addition, the CVEU has seven motor carrier investigators. Of these seven, six are in the field every day. The Traffic Division has an authorized strength of twelve officers; however, several positions are unfilled at this time.

Unfilled positions should be continuously refilled as soon as reasonably possible. In addition, consideration should be given to adding more personnel. A specific recommendation is made later in conjunction with size and weight enforcement.

OUT-OF-SERVICE VEHICLES

Currently, if a commercial vehicle is found to have a major safety defect, it is placed out of service by the state police. In theory, once a vehicle is placed out of service it is not supposed to re-enter the highway under its own power unless the defect is corrected. In practice, once the trooper leaves, the vehicle often returns to the highway. The Advisory Committee discussed many methods of addressing this problem, including disabling the vehicle by various methods, or issuing restricted travel permits to a point of repair. No solution seemed immediately apparent.

It is recommended that the Bureau of Public Safety be charged with studying this problem and incorporating its findings in the annual report to the Executive and the Transportation Committee called for in this report in January, 1987. The Bureau should draw on any public or private experts who might provide insight.

SAFETY INSPECTIONS

Maine is a member of the Commercial Vehicle Safety Alliance, a commercial vehicle inspection compact. Inspections conducted by one CVSA member are honored by all other CVSA members and by many non-member jurisdictions as well. Besides providing a standardized and thorough safety inspection, the CVSA process helps truckers avoid unnecessary delays, and allows state enforcement officials to concentrate on other vehicles.

Currently, almost all safety inspections in Maine are roadside inspections. The advantages of roadside inspections include seeing the vehicle in its natural element, and seeing the driver as well. Several members of the Advisory Committee recommended that Maine safety enforcement officials conduct terminal inspections. Prearranged terminal inspections would permit the inspector to see many more vehicles in a safe environment. Drawbacks to terminal inspections include not seeing the driver, and only seeing the equipment that the owner wants the inspector to see. Nonetheless, a vehicle inspected at the terminal would have reduced need to be inspected on the highway, thus freeing inspectors to concentrate on other vehicles.

The Advisory Committee was unanimous in strong support for the CVSA. Even though the CVSA does not use or favor terminal inspections as a part of its program, it is felt that Maine should give serious consideration to the development of a terminal inspection procedure or other alternatives that would result in substantially safer vehicles on the highway. Terminal inspections should probably be at the request of the owner and should probably be limited to certain times of the year. The possibility of instituting a fee system for the terminal inspections should be considered. Any terminal inspection program or other initiatives should complement the roadside inspection program and should not result in a lessened roadside effort. By careful coordination the roadside inspection program and other

initiatives adopted, it seems possible that greater overall safety could be achieved. As above, it appears that the Maine State Police are best equipped to evaluate the final practicality of this matter. Their findings should be incorporated in the annual report called for in this document.

EXTEND BUREAU OF MOTOR CARRIER SAFETY REQUIREMENTS TO ALL VEHICLES

The federal Bureau of Motor Carrier Safety establishes safety standards for interstate carriers. These standards relate to both the operator and the vehicle. There was general agreement among Advisory Committee members that these standards ought to be extended to private carriers and to all intrastate operators. Legislation to implement this recommendation has been prepared by the Bureau of Public Safety.

SUPPORT THE CONCEPT OF A NATIONAL DRIVERS LICENSE

Currently, it is entirely possible for a driver to hold operator licenses from several different states. It is also possible to obtain a license in a second state after the right to operate has been suspended in the first. A national drivers license compact exists to help combat these problems; however, the lack of a national database has hindered efforts. Currently, there is legislation in Congress to create a federal commercial vehicle operators license. The Committee felt that a national license administered in the base state ought to be considered. Many details need to be resolved; however, the concept is worthy of support. The appropriate Maine officials should cooperate fully in the development of national efforts. It is expected that these officials will indicate the need for any legislation in the annual report called for in this document.

ACCIDENT REPORTS

The possibility of collecting more detailed information on truck accidents was discussed. While it was generally agreed that technical information on the condition of the vehicle including the adequacy of brakes, the suspension system, tires, and other equipment relevant to the safe operation of the vehicle would be highly desirable in preventing future accidents, it was felt impractical to ask the average police officer to collect this sort of information. The collection of this type of data requires technical training, and in addition is very time consuming. It may require a day or more to adequately measure and test all relevant vehicle components. While this sort of in-depth analysis probably ought to be conducted on a random statistical basis, it would not be practical or productive to do as a matter of routine.

More information of a non-technical nature should be gathered. This would include information on vehicle type and age, whether substantially loaded or unloaded, and all relevant vehicle dimensions. In addition, the commodity carried should be ascertained, if possible.

The purpose of gathering this information would be to build a database of truck accidents to determine significant factors that may affect truck safety. Steps are being taken by the Bureau of Public Safety to implement this recommendation.

Protection of the Highway System

The public has invested billions of dollars in the state's highway system. The system is in place to be used, but its preservation at reasonable cost requires that it must be protected from abuse. Overweight trucks represent a significant threat to pavements and bridges. One truck each day overloaded to about the 45 percent level may reduce the life of a highway by a year. Just a few overloaded trucks in a traffic stream may reduce highway life by 40 percent or more.

Pavements are built to withstand a certain number of axle passages over their design lives. These passages are measured as 18,000 pound equivalent standard axle loads (ESAL). ESAL's increase as a fourth power function of weight so small increases in axle weight have a significant impact on pavement consumption. For example, increasing the weight of a single axle from 18,000 to 20,000, a weight increase of 11%, results in an increase in pavement consumption of over 52%. Increases for tandem and tridem axles are equally dramatic.

Bridges, unlike pavements, are designed to withstand a maximum gross load. While pavements react inelastically to a load, bridges react elastically. The bridge members stretch and recover. A single heavy load that stresses a bridge beyond its design limits could result in rapid deterioration or immediate failure. More frequently, the effect of excessive loads will lead to early failure but without external evidence for some time. Bridges are designed with a particular design vehicle in mind, either a single unit truck or a combination vehicle. Sixty percent of Maine's bridges were built before World War II, and were built for a 15 ton truck or less. Many bridges of that era were never formally designed. The result is that today's legal loads for special commodities can cause up to twice the recommended stress on some shorter, older bridges. The State of Maine has the resources to replace only about one percent of its bridges each year. Preservation of existing structures is essential.

INCREASE SIZE AND WEIGHT ENFORCEMENT

There was strong support on the Advisory Committee for increased size, weight, and safety enforcement. It was generally agreed that certain areas of the state receive virtually no size and weight enforcement due to manpower limitations. In addition, partly because of Federal interest in the Interstate System in particular, partly because of the threat of Federal sanctions, and partly because of the higher interstate trucking volumes on the Interstate System, a somewhat disproportional effort tends to occur on the Interstate System. However, most of the significant violations occur off the Interstate System.

The operation of overweight and overdimension vehicles not only consumes pavements and bridges more rapidly and endangers public safety, it also results in an unfair economic advantage to the illegal operator. The illegal operator may undercut his legally operating competition. The result is increased pressure to overload and a general depression in transportation price. Any short-term gains to the economy from this sort of competition are soon overwhelmed by the costs borne by the highway system and eventually the highway user.

Accordingly, it is recommended that, as a first step, the State Police size and weight detail be promptly brought up to and maintained at its authorized strength. In addition it is recommended that six troopers and one supervisor be added to the detail within the next biennium. The costs associated with these increases would be offset many times by the savings to the highway infrastructure. Legislation includes this recommendation.

REMOVE FINE CAP FOR SERIOUS OVERWEIGHT VIOLATIONS

The present overweight fine schedule for both gross and axle violations is based on the percentage by which the violator exceeds the road limit, and is progressive in nature. Larger violations are fined more severely than are lesser violations. Unfortunately, the schedule is capped at \$1000 for a forty-five percent violation. Larger violations pay no more. Once the decision to overload is made, there is incentive to exceed the limit by as much as possible. Given the low probability of being caught, overloading can be quite profitable to gamble. In 1983, MDOT analyzed a year's worth of overweight violations and found that approximately 14 percent of the non-interstate violations exceeded 45 percent. Periodic samples analyzed since 1983 have indicated a slight reduction in violations in excess of 45 percent; however, the problem still exists.

After considerable discussion, a consensus was reached on the removal of the fine cap. It was agreed that the effect of the removal of the cap should be evaluated annually. If the expected reductions in the severity of overweight violations are not achieved, then further action may be indicated.

Because the effects of overloads greater than 45 percent are so severe, it was felt necessary to offer a solution that protects the general users interest through meaningful deterrence. It is clear that the trucking industry is troubled by the prospects of higher penalties that could be regarded as confiscatory. The Committee recognizes this concern and concedes a fundamental need for fairness. There appears to be general acceptance that increasing the rate of penalty for increasing violations (progressively) is fair. There also appears to be an acceptance of \$1000 as a very substantial fine.

Based upon these considerations, it is proposed that the progressivity of the current fine schedule be made more progressive for fines up to \$1000 in conjunction with a relatively modest, constant fine rate above \$1000. This will not increase the total amount of fines for a given level of enforcement, only shift the burden somewhat to the greater offenders.

For violations of 11% to 49%, the proposed revised schedule would reduce all fines by a small amount by introduction of a schedule that increases the rate of penalty by \$5 a percent every 10% up to a 50% violation. That is, it provides five successive rates of \$10, \$15, \$20, \$25, and \$30 per percent violation. To provide a modest but effective deterrent above the 50% violation, a constant \$10 per percent is suggested as an initial step. The effectiveness of this legislation in providing a true deterrent should be considered. A trial application of these changes indicates practical revenue neutrality. A small loss in total fines is indicated, but there is a shift in impact to the largest violations.

One of the major complaints of the trucking industry centers on the fact that fines for the violation of the commodity permit limits are calculated from the general road limit. Truckers argue that they have paid for a privilege and that they should receive credit. MDOT argues that commodity permits are not registrations, but rather they are a special fee for a special privilege. Further, if commodity permits should be considered registrations it would have an adverse financial impact on the native trucking industry and the highway. If commodity permits should be considered registrations, then about twelve hundred 3-axle trucks would become liable for the Federal Heavy Vehicle Use Tax, and other trucks would be liable for additional tax. Further, commodity permits, because they are considered special permits, are sold to foreign-based vehicles. About one quarter of the commodity permits for combination vehicles are sold for use by out-of-state truckers. Lastly, MDOT has argued that the highway does not care whether or not a commodity permit has been purchased. Once a given limit is exceeded the damage is the same.

The above notwithstanding, it would seem to further the cause of highway equity if some consideration was given to the purchase of commodity permits. Accordingly, it is recommended that commodity permits be allowed as a rebate against up to 50 percent of one overweight violation that occurs during any registration year. The violator would have to apply to the Division of Motor Vehicles for the rebate. The fine, however, would still be calculated from the road limit. This recommendation partially addresses the concerns of the trucking industry while preserving the deterrence of the fine schedule.

Legislation includes these provisions.

MODERATE FINES FOR MINOR OVERLOADS

Truckers using commodity permits have strenuously objected to the high first step of the fine schedule when it is calculated from the general road limit as at present rather than the commodity limit. Other non-commodity user members note that commodity permits already extend a special privilege enjoyed by a few industries. Clearly, damage to the system is not affected by the commodity carried so logically all users should face the same penalty once their privilege is exceeded.

The Committee nonetheless concedes the high step argument has validity and recommends an expanded transitional zone to ease the effect of minor violations of any weight limit.

This recommendation would retain the present transition for gross vehicle weight overloads. The treatment of minor gross overloads appears to be fair and rational because it varies with the number of load bearing axles.

The treatment of axle overloads appears unrealistic as it does not vary with number of axles in the group, has little progressivity, and may be too narrow in terms of amount of overload. The recommended approach would retain the waiver for any axle group violation under 1000 pounds. It would, however, next define a one-third normal fine for the next 500 pounds times the number of axles in the group and finally define a one-half normal fine for the next 500 pounds times the number of axles in the group.

This would act differently for single, tandem and tridem axle groups. For single axles, it would reduce standard fines by two-thirds for excesses of 1000 to less than 1500 pounds and reduce standard fines by one-half for excesses of 1500 to less than 2000 pounds. For tandem axles, the two-thirds reduction would range from 1000 to under 2000 pounds and the one-half reduction from 2000 to under 3000 pounds. For triaxles, the two-thirds reduction would range from 1000 pounds to less than 2500 and the one-half reduction from 2500 to less than 4000 pounds.

Legislation is drafted to implement this change. This legislation also calls for removal or reduction of this provision when technology exists to allow practical control of load distribution at reasonable cost.

OVERHEIGHT VIOLATIONS AND EXCEEDING A POSTED HEIGHT ON A BRIDGE

Overheight loads pose both a serious safety threat, and result in thousands of dollars in added bridge damage annually. Overheight loads tend to make the vehicle unstable as the center of gravity is raised. In addition, many bridges and overpasses are struck repeatedly each year by vehicles either exceeding the posted limit or operating over the general height limit of fourteen feet.

The violation for exceeding the height limit is currently classified as a traffic infraction, and the fine ranges from \$25 to \$250. Typical fines are in the \$35 range and do not seem to offer any deterrent.

The State Police will be taking a more aggressive attitude toward overheight violations. It is clear, however, that overheight fines must be increased to provide a credible deterrent. It is recommended that the minimum fine for operating overheight be raised to \$100 and that the maximum be raised to \$1000. In addition, the minimum fine for violating a posted height of a bridge should be \$250 and the maximum be \$1000. Anyone striking a structure should be held accountable for the full cost of damages. Currently, lesser settlements are often requested as some insurance companies will fight against paying full costs. MDOT, for its part, will make its publication on limiting structures more readily available, and will take a more active part in the posting of townway structures for proper height limitations. Fines should accrue to the Highway Fund rather than the General Fund. Necessary legislation has been prepared. Consideration will be given to "soft" loads such as wood chips which may mound up, and which pose no threat to structures. This must be regarded as a first step; however, it is hoped that it will prove sufficient.

ESTABLISHMENT OF AN IMPROVED FINE SCHEDULE FOR POSTED BRIDGES

The current fine for violating a bridge posting is \$40 per 1000 pounds up to a maximum of \$1000 if the bridge is posted by MDOT, and up to \$500 if posted by a town. While this fine is fairly significant, the penalty does not take into account the differences in bridge postings and the current fine cap does not discourage the largest violations. A bridge may be posted for any limit found to be necessary to protect the life of the structure and its users. A bridge posted for three tons is much more vulnerable than one posted for twelve tons and the fine should be based accordingly. As with all weight violations, MDOT believes that the fines should be progressive and uncapped. Any fine schedule for violating a posted bridge limit should take that limit into account. Recent legislation directs MDOT to take a more active role in the posting of local bridges.

Research shows that it would require different fine schedules for each posted limit to truly respect the vulnerability of different posting limits. In addition, the degree of risk does not appear uniform for exceeding different postings so providing schedules with rational progressivity would lead to great complexity. It is, therefore, proposed to provide for a fine based partly on pounds overlimit and partly on percent overlimit until a fine of \$1000 is reached. For totals over \$1000 the excess over \$1000 is halved to determine the fine. This reduced fine rate for large overloads respects objections to confiscatory fines but provides a credible deterrent.

Legislation is drafted that would impose a fine of \$20 for each full thousand pounds overweight, plus \$30 for each full 10% up to the \$1000 limit. Above the \$1000 limit only half the excess over \$1000 is applied as added fine. Fines would be waived if the vehicle gross weight excess was under 500 times the number of axles less one and halved if the excess were under 1000 pounds times the number of axles less one in similar fashion to highway gross weight excesses.

POSTING BRIDGES FOR ONE TRUCK, SPEED, AXLE WEIGHT OR OTHER RELEVANT LIMITS

Where practical and appropriate, limiting bridges to a single truck or restricting trucks to low speed can substantially extend the life of structures and increase the safety of users. MDOT has the authority to institute such postings, and the Advisory Committee recommended and MDOT agreed that these types of postings should be used whenever feasible and necessary. The fine for violating this type of posting should be the same as for an overheight violation; \$250 to \$1000 and fines should accrue to the Highway Fund. Legislation includes these provisions.

UNDERREGISTRATION VIOLATIONS FINE SCHEDULE

The practice of underregistration is both prevalent and significant. Fines for violations range from \$25 to \$250, however, typical fines tend to be less than \$50. While violators are required to buy a full year's registration, deterrence is not very great given the relatively low chance of being caught. The risk of underregistration appears well worth the gamble. The average underregistration violation is over 50 percent and violations of more than 100 percent are common.

It is recommended that an underregistration fine schedule be enacted that is progressive in nature, and that is based on the registration fee avoided. Such a schedule, combined with greater enforcement, should discourage the practice of underregistration. Partial credit should be allowed for short-term permits purchased. Legislation drafted reflects that recommendation.

REPEAT VIOLATOR

An analysis of truck size and weight violations of all types indicates that there is a pattern of repeat violators. It is recommended that MDOT continue to analyze this problem and include any findings in the annual report called for in this study. Industry input should be included.

REDUCE THE ALLOWABLE TRIAXLE WEIGHT FOR THE FOREST PRODUCTS FOUR AXLE SINGLE UNIT TRUCK

Currently, the four axle single unit truck, when operating under the forest products commodity permit (tolerance), is permitted to carry 64,000 pounds on its triaxle unit. This tolerance limit is one-third greater than the general road limit for the triaxle. While this limit causes considerable pavement distress especially if any unbalance exists within the axle group, the principal problem is the stress caused in bridges. This vehicle causes design stress limits to be exceeded by more than 100 percent for many of Maine's older bridges. Even the most modern bridges in the state are placed in jeopardy by this vehicle design.

The forest products industry, while not disagreeing with the impacts to the highway system, contends that the present weight limit is necessary because of the low rates available for hauling forest products. They point out that it is not possible to simply change to another vehicle because the maneuverability, traction and one-man operation of a single unit vehicle is necessary in western Maine's small and mountainous woodlots.

After weighing all concerns, it was concluded that a reduction in the 64,000 pound forest products triaxle was unavoidable. Some preliminary evaluation suggested that 57,000 pounds was about the maximum limit that could be considered. It was clear that opportunities to convert vehicle types and negotiate higher haul rates should be part of any reduction. Progress in the conversion of vehicle type, which is somewhat dependent upon field testing of experimental vehicles, cannot be predicted with accuracy at this time. Success in renegotiating haulage rates will probably require some alteration in the present business climate.

To react responsibly to the above concerns, it is recommended that reduction in the 64,000 pound triaxle be phased. Four axle single unit vehicles placed in service on or after January 1, 1987 would be permitted to operate with a maximum 60,000 pound forest products triaxle limit. For four axle single unit vehicles in service on January 1, 1987 and for which the forest products commodity permits have been previously purchased, the triaxle limit would remain 64,000 pounds until January 1, 1989. On or after January 1, 1989, the forest products triaxle limit would be 60,000 pounds for all single unit trucks. The fee for the commodity permit for the 60,000 pound privilege should be \$300.

The next phase should be developed by MDOT with advice from the forest products industry and others, and incorporated into the report to the Executive and the Legislature in 1989. The extent of reduction and the nature of any other kind of control of this loading and fees should reflect a careful review of the same facts treated in this study, together with an evaluation of progress achieved in the first phase.

Legislation to implement the above initial control measures on the forest products trucks has been drafted.

CLOSURE

In this report, the trucking industry is often described as if it were a monolithic entity. This, of course, is usually not the case. There are many different aspects to the trucking industry. The interests and concerns of the forest products haulers, for example, are not necessarily those of the interstate for-hire carriers. The preceding recommendations contained in this report will not impact all aspects of the trucking industry equally. The benefits to be derived from IRP entry, uniformity, and compacts would accrue primarily to those operators in interstate commerce. Increasing vehicle length, encouraging experimental vehicles, developing a haulroads policy, and encouraging greater use of the six axle combination vehicle would primarily benefit the forest products trucking industry, while reducing the triaxle tolerance for the forest products four axle single unit vehicle would have at least some negative impact on this industry, at least initially.

Other aspects of this study will affect the entire industry. Increasing safety, size and weight enforcement will benefit all highway users through increased safety and the protection of the public's investment in the system. Adjusting the registration brackets to more closely reflect vehicle road limits and other relevant criteria will benefit all commercial users by reducing confusion and making registration payments more closely reflect responsibility. Encouraging fair competition through the control of overloads will benefit the trucking industry and the state as a whole by allowing the industry to compete with neighbor jurisdictions without the necessity of resorting to overloading.

The challenges are to continue the dialogue developed in this effort; to encourage the productive use of the highway system while protecting that system from abuse; to work toward the reduction of unnecessary administrative burdens on the trucking industry and an increase in the free flow of traffic among jurisdictions; and, to promote the safe use of the highway system. To meet these challenges will require the cooperation and combined efforts of the trucking industry, other highway users, government officials, and concerned citizens. All concerned must be forward looking, and be willing to evaluate new ideas, in the search for greater productivity, safety, and protection of the highway system.

APPENDIX A
TRUCK ISSUES ADVISORY COMMITTEE

Dr. John Alexander
Civil Engineering Dept., UMO

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Maine Automobile Association

Kevin Burns
Blue Rock Industries

Dana F. Connors, Commissioner
Maine Dept. of Transportation

The Honorable Charles Dow
State Senator

Peter Greene
Pioneer Plastics

Clifton Halacy, Pres.
Merrill Transport

Hollis Hanington, Jr.
Hanington Brothers, Inc.

Carolyn Manson, Div. Chief
Division of Motor Vehicles

The Honorable Orland McPherson
State Representative

The Honorable Fred Moholland
State Representative

George Parke, Pres., MMTA
Parkway Transport

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The Honorable Roger Pouliot
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References Sources

Ted Johnston, Exec. Dir.
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Maine Motor Transport Assoc.

Robert McEvoy, P.E.
Federal Highway Admin.

Steve Murray, Dpty. Dir.
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OFFICE OF
THE GOVERNOR

NO. 2FY 85/86
DATE August 9, 1985

TRUCK SIZE, WEIGHT, AND FINE STUDY

WHEREAS, that segment of the economy, the trucking industry, is vital to the economic welfare of the State; and

WHEREAS, a rational and equitable system of truck axle and gross weight, and size limits are necessary both to protect the State's highways and bridges and to allow economic use of the highway system; and

WHEREAS, the technology relating to the trucking industry is evolving resulting in new vehicle configurations which may offer an opportunity for increased productivity while lessening highway and bridge damage; and

WHEREAS, the State could play an important role in evaluating new vehicle configurations, and in providing incentives to encourage superior vehicle configurations; and

WHEREAS, the current laws relating to truck size and weights, vehicle configurations, and overweight fines are contradictory and confusing; and

WHEREAS, there needs to be better understanding of the issues relating to truck size and weight, and an active communication of those issues;

NOW, THEREFORE, I, JOSEPH E. BRENNAN, Governor of the State of Maine, do hereby establish a Study on Truck Size, Weight, and Fines.

A. Study Conducted

That the Department of Transportation shall conduct a study of the current laws relating to truck size and weights, vehicle configurations, and overweight fine schedules. The study shall also include an analysis of the effect of heavy axle and gross weights on highway and bridge damage. In addition, the Department shall investigate vehicle configurations that provide for high productivity and less highway and bridge damage. The Department shall consider the economic impacts of any recommendations. Further, the Department is specifically charged with the investigation of economic incentives to encourage a shift toward more productive and less damaging vehicles.

B. Advisory Committee Established


An Advisory Committee shall be named to provide information to the Department relevant to the Study. Individuals to serve on the Advisory Committee shall be designated by the Governor and shall include four members of the Joint Standing Committee on Transportation, one representing the Senate, and three representing the House of Representatives; six members representing the trucking industry; one member representing the non-trucking highway user; one member from the University of Maine at Orono representing the Department of Civil Engineering; and one member each representing the Bureau of Public Safety and the Division of Motor Vehicles.

C. Report Required

The Department of Transportation shall submit a report by January, 1986. The report shall detail current truck weight laws, and shall make appropriate recommendations to encourage economic use of the highway system while providing adequate safeguards to protect that system. The report will reflect all relevant opinions and positions presented by Advisory Committee members.

D. Staffing Required

The Department of Transportation shall provide adequate staff to carry out the intent of this Executive Order.



JOSEPH E. BRENNAN
Governor

APPROXIMATE EQUIVALENT STANDARD AXLE LOADS

FLEXIBLE PAVEMENTS

| <u>Weight (000 lbs.)</u> | <u>Single Axle</u> | <u>Tandem</u> | <u>Tridem</u> |
|--------------------------|--------------------|---------------------|---------------------|
| 10 | 0.1 | | |
| 12 | 0.2 | | |
| 18 | 1.0 | | |
| 20 | 1.5* | 0.1 | |
| 22 | 2.2** | 0.2 | |
| 24 | 3.0*** | 0.3 | |
| 28 | 5.4 | 0.5 | |
| 32 | 8.9 ⁺ | 0.9 | 0.3 |
| 34 | 11.2 | 1.1* | 0.4 |
| 36 | 13.9 | 1.4 | 0.4 |
| 38 | 17.2 | 1.7** | 0.6 |
| 44 | 31.0 | 3.0 ⁺⁺⁺⁺ | 1.0 |
| 46 | | 3.6*** | 1.2 |
| 48 | | 4.2 | 1.5** |
| 50 | | 4.9 | 1.7 |
| 54 | | 6.5 | 2.4*** |
| 56 | | 7.4 ⁺ | 2.7 |
| 60 | | 9.6 | 3.6 |
| 64 | | 12.2 | 4.3**** |
| 65 | | 13.0 ⁺⁺ | |
| 70 | | 17.2 | 6.3 ⁺ |
| 75 | | | 8.4 |
| 78 | | | 9.7 ⁺⁺ |
| 84 | | | 12.8 |
| 93 | | | 18.7 ⁺⁺⁺ |

- * - Interstate road limit for heavy trucks
- ** - Maine General Law Road Limit (approximate)
- *** - 10% Tolerance Limit (approximate)
- **** - Forest Products Tridem Limit
- + - 45% over the road limit (approximate)
- ++ - 45% over the tolerance limit (approximate)
- +++ - 45% over the forest products tridem limit (approximate)
- ++++ - Tolerance limit for combination vehicles

REGISTRATION BRACKETS

CURRENT BRACKETS

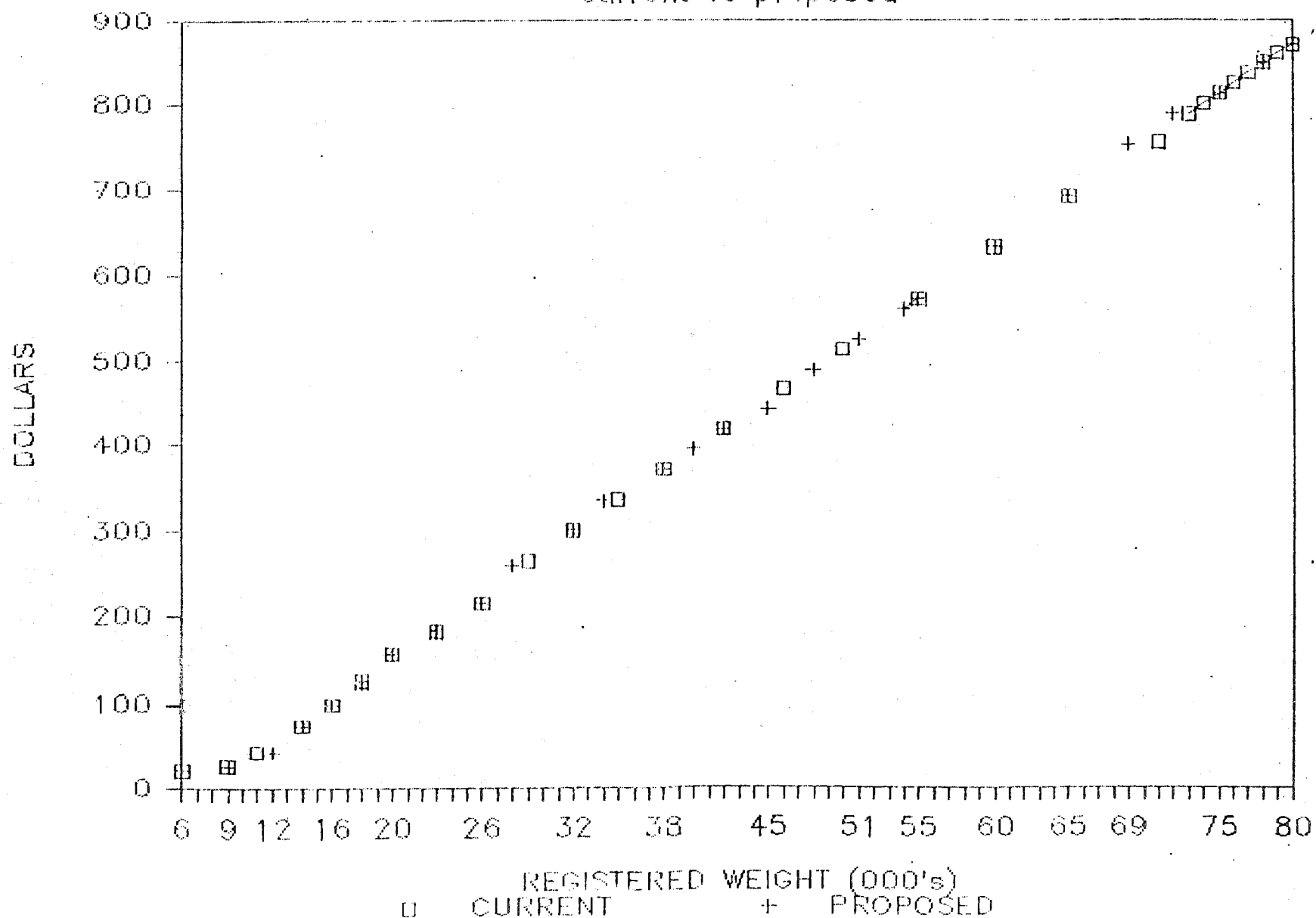
| (000's) | FEE |
|----------|-------|
| 0 TO 6 | \$20 |
| 6 to 9 | \$26 |
| 9 to 11 | \$43 |
| 11 to 14 | \$76 |
| 14 to 16 | \$100 |
| 16 to 18 | \$125 |
| 18 to 20 | \$156 |
| 20 to 23 | \$183 |
| 23 to 26 | \$215 |
| 26 to 29 | \$265 |
| 29 to 32 | \$301 |
| 32 to 35 | \$336 |
| 35 to 38 | \$372 |
| 38 to 42 | \$419 |
| 42 to 46 | \$467 |
| 46 to 50 | \$514 |
| 50 to 55 | \$573 |
| 55 to 60 | \$633 |
| 60 to 65 | \$692 |
| 65 to 71 | \$758 |
| 71 to 73 | \$790 |
| 73 to 74 | \$802 |
| 74 to 75 | \$814 |
| 75 to 76 | \$826 |
| 76 to 77 | \$838 |
| 77 to 78 | \$850 |
| 78 to 79 | \$861 |
| 79 to 80 | \$870 |

PROPOSED BRACKETS

| (000's) | FEE |
|----------|-------|
| 0 TO 6 | \$20 |
| 6 to 9 | \$26 |
| 9 to 12 | \$43 |
| 12 to 14 | \$76 |
| 14 to 16 | \$100 |
| 16 to 18 | \$125 |
| 18 to 20 | \$156 |
| 20 to 23 | \$183 |
| 23 to 26 | \$215 |
| 26 to 28 | \$260 |
| 28 to 32 | \$301 |
| 32 to 34 | \$335 |
| 34 to 38 | \$372 |
| 38 to 40 | \$396 |
| 40 to 42 | \$419 |
| 42 to 45 | \$443 |
| 45 to 48 | \$490 |
| 48 to 51 | \$526 |
| 51 to 54 | \$561 |
| 54 to 55 | \$573 |
| 55 to 60 | \$633 |
| 60 to 65 | \$692 |
| 65 to 69 | \$755 |
| 69 to 72 | \$790 |
| 72 to 75 | \$814 |
| 75 to 78 | \$850 |
| 78 to 80 | \$870 |

COMMERCIAL REGISTRATION SCHEDULE

current vs proposed



HE

5614.3

M2

M34

1986

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Maine.

Final report of the Truck Issues Advisor



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