

# MICROFILM DIVIDER

OMB/RECORDS MANAGEMENT DIVISION  
SFN 2053 (2/85) 5M



ROLL NUMBER
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DESCRIPTION

2316

2007 SENATE TRANSPORTATION

SB 2316

## 2007 SENATE STANDING COMMITTEE MINUTES

Bill/Resolution No. SB 2316

Senate Transportation Committee

Check here for Conference Committee

Hearing Date: January 25, 2007

Recorder Job Number 1919

Committee Clerk Signature

*Jody Hauge*

Minutes:

**Senator Gary Lee** opened the hearing on SB 2316 relating to overweight vehicle penalties.

There were 5 committee members present and one absent.

**Senator Christmann** sponsored SB 2316 and spoke in support of it. He stated that these old single axle trucks are still very important to farming operations and are used for short hauls but not often on long hauls. There seems to be a problem with how much weight these trucks can actually carry and be within state law. The way the law reads now, the weight is measured on the axel weight. So even if you are within the Gross Vehicle Weight (GVW) you may be overloaded on the rear axle and subject to be fined. Senator Christmann admitted that he did not realize this and he goes by GVW when hauling in his single axle truck. He had talked with different farmers with single axle trucks and all of them said that they loaded their trucks to be in compliance of the GVW and did not know that they were not within the allowed weight according to the way the law reads now. He asked for support of SB 2316.

**Senator Lee** asked if a single axle truck with a short box would cause more damage to roads because of the weight on the rear axle.

**Senator Christmann** said that he was correct but it may take twice as many trips, so which is harder on the road. He also added that because of the decrease in weight that single axle trucks can carry if the rear axle law is enforced we might as well junk these trucks.

**Stephen Hovey**, Center, ND testified in support of SB 2316. Mr. Hovey brought written testimony along with a picture of the truck, drawings of the truck and a copy of the official receipt/permit from the ND Highway Patrol. In his letter of testimony, he states that a single axle farm truck cannot be loaded to the allowable GVW without exceeding the allowable weight on the rear axle because of the configuration of the trucks in use in ND. Single axle trucks similar to their truck have been in general use on the highways of ND for 40 years. For all of those 40 years they have been overloaded on the rear axle. He stated that they know the gross weight of the truck every time they haul a load to the elevator and we have adjusted the amount of grain on the truck in an attempt to comply with the allowable GVW. However they never had weighed the individual axles and would be willing to bet that most other farmers haven't done so either. Limiting the loading of this type of truck to the allowable rear axle weight would require the farmers to make 38% more trips to the elevators. The added cost to the industry in fuel, repairs and most importantly time, would be huge. He stated that they live and die by used equipment and they have two single axle trucks.

**Michael Hovey**, Center, ND farms with his brother Stephen and also spoke in favor of SB 2316. He stated that these trucks are very useable and asked that the committee support this bill and keep these trucks in business.

**Senator Potter** said that we wouldn't want SB 2316 to apply to commercial use.

**Senator Christmann** said that his intent was farm vehicles.

**Senator Nething** asked what weight difference it would make if we changed from axle weight to GVW weight.

**Michael Hovey** answered that with actual axle weight he could legally haul about 200 bu.

With GVW he could legally haul 300 bu.

**Gary Levi**, Deputy Director for Engineering for the NDDOT spoke in opposition to SB 2316.

See written testimony.

**Senator Nething** asked if we had different standards in the last forty years or if these vehicles have been hauling loads that were not legal.

**Mr. Levi** replied that the rules have been in place a long time. These single axle trucks were probably never legal.

**Senator Lee** asked if after looking at the drawings if Mr. Levi thought the rules were reasonable.

**Mr. Levi** replied that he felt they were.

**Senator Lee** asked how these rules were enforced.

**Mr. Levi** said that enforcement belongs to the Highway Patrol.

**Leanna Emmes**, NDHP said that if they went from 8 1/4 tires to a 9 on a single axle truck it would increase their weight load from 18,000 to 20,000.

**Senator Nething** said that other states must have dealt with this problem. These trucks are only used on limited bases; there must be some other way to come to a conclusion.

**Mr. Levi** said that other states have similar rules and Minnesota's is even more restricted.

Also he added that we have the Harvest Permit.

**Senator Nething** asked if it was all over the state. Are there allowances so they can fill their trucks according to GVW?

**Mr. Levi** said if we put in exemptions so they can use these vehicles and use them fully

loaded, it will affect the life of the pavement. If you give exemptions it still does damage to the pavement.

**Senator Potter** asked if the department agreed that old single axle trucks aren't used much.

**Mr. Levi** answered that there were still quite a few out there.

**Senator Lee** asked if it were just farm vehicles would it be more acceptable.

**Mr. Levi** answered no.

**Senator Lee** asked as the law is written what vehicles we would be dealing with.

**Mr. Levi** answered that we would be dealing with gravel trucks, small contracting firms and others.

**Senator Lee** what is the cost of the Harvest permit.

**Mr. Levi** said \$50./month or \$250/year

**Tom Balzer**, ND Motor Carriers Association spoke in opposition to SB 2316. He said if this passed that they would be right back with UPS trucks, FedEx trucks and all delivery trucks.

There concern is with the damage to the roads. Research showed that slow overloaded vehicles do more damage to the roads.

**Senator Nething** asked Mr. Balzer what other states do. Do they have any farm exemptions?

**Mr. Balzer** said he didn't know the answer. He said over weight is over weight. He will find out the answer for Senator Nething.

**Senator Potter** said if you load in front it isn't as safe.

**Mr. Balzer** said he agreed.

**Senator Lee** asked if the truck or the regulation was the problem.

**Mr. Balzer** said the design of the single axle truck is 40 years old. Regulations are set to protect the roadway.

**Leanna Emmer**, NDHP testified as neutral and explained the Harvest permits. She also stated that this is a safety control the HP has. If too much weight is on the axles it could make it more difficult to steer.

**Senator Christmann** clarified that he was focusing this bill on Agriculture. He stated that the law has not changed but maybe the enforcement is what is changing. He said he had not found anyone that realized they could be penalized because of axle weight and not gross vehicle weight. No one actually knew they were breaking the law.

**Senator Bakke** again asked for a clarification of the Harvest permit exemption.

Senator Christmann said it was \$50/30 days or \$250./year (year running mid July to December). The Harvest permit does not extend through seeding, fertilizing or spraying season.

Those registered in opposition and not testifying are: Darcy Rosendahl, NDDOT and Brad Dale, NDDOT.

Registered as neutral and not testifying was Kathy Tandber, BHG news.

Senator Lee closed the hearing on SB 2316.

## 2007 SENATE STANDING COMMITTEE MINUTES

Bill/Resolution No. SB 2316

Senate Transportation Committee

Check here for Conference Committee

Hearing Date: February 1, 2007

Recorder Job Number: 2545

Committee Clerk Signature

*Joan Hauge*

Minutes:

**Senator Lee** opened committee work on SB 2316 relating to overweight vehicle penalties.

Senator Lee said the bill is a bit pragmatic because it does not specify just single axle farm trucks and could include many single axle vehicles. This vehicle has some options. They can put on a tag, get a harvest permit, change tire size. All three will give the single axle truck an opportunity to carry more weight.

**Senator Potter's** concern is that there will be other trucks like UPS, Fed Ex and others in line.

Does this bill apply to them?

**Senator Lee** said that it was his understanding that it does. He got a letter from Leanna Emmer, NDHP and she does indicate that it will apply to many vehicles like UPS, Cross Country, Fed EX etc,

**Senator Potter** asked if it would be better if it was just for farmers.

**Senator Lee** said you just don't see many of these single axle trucks that are used for highway purpose. He doesn't think the highway patrol is out there looking for them. Someone got caught here and that is why we have this bill before us.

**Senator Bakke** said that these truck owners can buy permits to carry more weight and they didn't buy one.



**Senator Nething** said that the permit only allows for ten percent more weight and that is not enough.

**Senator Lee** said that they could increase the tire size or add axle.

**Senator Nething** said it can't be a big problem if the farm organizations don't come in and support it.

**Senator Nething** moved a Do Not Pass.

**Senator Fiebiger** seconded the motion.

The clerk called the roll 5-0-1.

**Senator Bakke** will carry the bill.

Date: 2-1-07  
Roll Call Vote #: 5-0-1

2007 SENATE STANDING COMMITTEE ROLL CALL VOTES  
BILL/RESOLUTION NO. ~~2211~~ 2316

Senate Transportation Committee

Check here for Conference Committee

Legislative Council Amendment Number \_\_\_\_\_

Action Taken Do not Pass

Motion Made By Senator Nething Seconded By Senator Fiebiger

Senators	Yes	No	Senators	Yes	No
Chairman Gary Lee	✓		Senator JoNell Bakke	✓	
V Ch John Andrist			Senator Tom Fiebiger	✓	
Senator Dave Nething	✓		Senator Tracy Potter	✓	

Total (Yes) 5 No 0

Absent 1

Floor Assignment Senator Bakke

If the vote is on an amendment, briefly indicate intent:

REPORT OF STANDING COMMITTEE (410)  
February 1, 2007 12:25 p.m.

Module No: SR-22-1785  
Carrier: Bakke  
Insert LC: . Title: .

**REPORT OF STANDING COMMITTEE**

**SB 2316: Transportation Committee (Sen. G. Lee, Chairman) recommends DO NOT PASS (5 YEAS, 0 NAYS, 1 ABSENT AND NOT VOTING). SB 2316 was placed on the Eleventh order on the calendar.**

2007 TESTIMONY

SB 2316

December 12, 2005

Senator Randel Christmann  
401 3<sup>rd</sup> Ave. NE  
Hazen, ND 58545-4429

Senator Jerry Klein  
PO Box 265  
Fessenden, ND 58438-0265

Dear Sirs:

We are writing this letter to ask you to look into what we believe to be a problem with the allowable axle weights for farm trucks. Enclosed is a copy of an official Receipt/Permit issued to Eric Hovey on September 15, 2005. At the time we were combining pinto beans and hauling them about ¼ of a mile from the field to a local elevator over State Highway #30. You will note that we were charged a fee of \$220.00 because our truck was overloaded by some 4300# on the rear axel. Please take notice that the truck Gross Vehicle Weight (GVW) was within state limits at 28,000#.

The truck involved was a 1969 GMC truck with 8.25" tires. The truck is equipped with a 14 foot long box. The box is 7 feet 7 inches wide and 4 feet 2 inches high. The attached figure one shows a scale drawing of the truck along with the empty axle weights. We believe that this truck is typical of the single axle trucks that have been used on the majority of North Dakota farms since the 1960's. Virtually every farm in the state still has a truck similar to this one, and they are still invaluable to production agriculture.

Figure two shows what the axle weights would be if the box were filled level full with wheat. You will note that the truck GVW is in excess of state regulations by some 2300# while the rear axle is overweight by some 7,000#.

Figure three shows what the axle weights would be if the truck is loaded to the legal GVW of 28,000#. You will note that while the GVW of the truck is within limits, the rear axle weight exceeds the allowable weight by some 4,900#. This is the situation we were cited for on the 15<sup>th</sup> of September.

Senators Christmann and Klein  
Page 2

Figure four shows what the truck could legally carry if the load were evenly distributed in the box and the rear axel weight were kept to the allowable load of 18,000#. You will

note that the truck could only be loaded with 232 bushels of wheat instead of the 320 bushels that could be hauled in figure three. In other words, the truck can only haul 72.5% of the payload allowable under the GVW limit because of the rear axel limit and the configuration of the truck.

Figure five shows how the truck would have to be configured to allow the truck to haul the maximum load allowed under the GVW limit and still not exceed the allowable axel weights. We would submit to you that you have never seen a farm truck configured like figure five on the roads of North Dakota.

The purpose of this letter is to make several points to you:

- 1) Single axel farm trucks cannot be loaded to the allowable GVW without exceeding the allowable weight on the rear axel because of the configuration of the trucks in use in North Dakota.
- 2) Single axel trucks similar to our truck have been in general use on the highways of North Dakota for 40 years. For all of those 40 years they have been overloaded on the rear axel. We've done it and so has every other owner of similar trucks. In fact, we had no idea that we were overloading the rear axel. We know the gross weight of the truck every time we haul a load to the elevator and we have adjusted the amount of grain on the truck in an attempt to comply with the allowable GVW. However we never have weighed the individual axels, and we would be willing to bet that most other farmers haven't done so either.
- 3) Limiting the loading this type of truck to the allowable rear axel weight would require the farmers to make 38% more trips to the elevators. The added cost to the industry in fuel, repairs and most importantly time, would be huge. This cost would further burden an industry already stressed due to the low commodity prices and the rising costs of machinery, repairs, fuel, fertilizer, and chemicals.

We suggest that you plan to introduce legislation that would place the load limits on farm trucks based on GVW only. We suggest this because we believe that it is not fair to enforce axel limits on trucks that cannot meet the limits because of the way the trucks were manufactured. We also believe that any damage done to the roads by exceeding the rear axel load limits has become part of the "base line" of road deterioration because these trucks have always exceed the rear axel load limits. Changing the load limits to GVW only would not increase the costs for road maintenance over what we are paying now.

We are sure that every person involved in the enforcement of weight restrictions would tell you that a citation could be issued every time a loaded single axel farm truck is pulled

Senators Christmann and Klein  
Page 3

over. We are also sure that the axel limits have not been aggressively enforced because the people enforcing the weight limits know that it would result in a public uproar. We believe that such selective enforcement of our laws is bad public policy.

We appreciate any help you can provide in changing the present situation. Should you have any questions, please feel free to contact either one of us.

Thank you for your attention.

Sincerely,

---

Stephen W. Hovey  
PO Box 383  
Center, ND 58530  
(701) 794-3619

---

Michael A. Hovey  
2249 Highway #30  
Fessenden, ND 58438  
(701) 547-3538

enclosures (6)  
cc. Mark Conlin, Editor, Farm and Ranch Guide  
Representative Rick Berg

**OFFICIAL RECEIPT/PERMIT**  
**NORTH DAKOTA HIGHWAY PATROL**  
 SFN 3507 (Rev. 10-98)

No. **965126**

Unit No. <b>31 119</b>	District <b>21</b>	Temp. License No.
Date <b>09/15/05</b>	Time <b>11:51:15</b>	FAX To

Driver <b>Stephen W Harvey</b>		Street <b>PO Box 282</b>	
City <b>Center</b>	St <b>ND</b>	Zip <b>58526</b>	Insured By
Year/Make <b>1969 GMC</b>	RGW <b>26000</b>	lbs	Trailer Year/Make
Model <b>FBE 710</b>	St <b>ND</b>	VIN <b>087549</b>	Lic
St <b>ND</b>	St	VIN	
From <b>Rural Hamberg</b>	Description of Load <b>Porte log</b>		
To <b>Rural Hamberg</b>	Date of Movement <b>09-15-05</b>		
Highways <b>30</b>			
Width	Length	Overhang-Front	Overhang-Rear
Bridge Length <b>101</b>			
No. of Axles <b>2</b>	GVW <b>28000</b>	lbs	County <b>Wells</b>
Hwy <b>RD</b>	Milepoint <b>112</b>		
Wghts:	No. Ax.	Wgt.	No. Ax.
Sz:	No.	Sz.	No.

FEES	
10% Weight Exemption	
Approved Equipment - Trailers	
Approved Equipment - Trucks	
Combine - Non-Resident	
Combine - Resident	
Crash Reports	
Engineering Fee	
Escort	
Extra Road Use (Overload)-Field	<b>220.00</b>
Extra Road Use (Overload)-Scale	
Faxing Fee	
Fuel Tax - Diesel	
Fuel Tax - Gas	
Heavyweight	
IFTA	
Interstate - SFN 13780	
Interstate - SFN 3507	
LCV - SFN 3507	
LCV - SFN 3640	
Mobile Home - 3507	
Mobile Home - ID Supplement	
Mobile Home - SFN 14242	
MV Fees - Power Units	
MV Fees - Trailers	
NSF Payment	
Other	
Other Non Monetary	
Oversize - ID Supplement	
Oversize - SFN 18603	
Oversize - SFN 3507	
Oversize - SFN 3540	
Seasonal	
Special Mobile Equip - ID Supp	
Special Mobile Equip - SFN	
Special Mobile Equip - SFN 3507	
Ton Mile	
Trip Permit	
Vending Machines	

- Requirements As Indicated
- Sunrise to sunset only
  - Require red flags, front and rear, traffic side of load (18"x18")
  - No travel if visibility is poor or highway is slippery
  - No travel on shoulders of road
  - Allow traffic to pass
  - Check all vertical clearances
  - No travel if temperature exceeds 85 degrees-interstate system excluded
  - Speed not to exceed mph on &
  - Cross structures mph at
  - Triple axle not to exceed 20,000 lbs. per axle
  - Four or more axles per group not to exceed 17,000 lbs/axle
  - Must contact county(ies) to use county roads
  - Require readable sign (Long Load 12" X 60")
  - No travel if wind velocity exceeds 25 mph
  - Must furnish own pilot cars. Front Rear
  - Two-way communication between pilot car(s) & towing unit

Other requirements or remarks: **19,140 lbs - 12' x 12' x 12' - 4 axles**

**24-06-04-01. NDAC. Liability of permit applicant.** 1. The applicant or permittee, as a condition for obtaining an oversize or overweight, or both, permit, shall assume all responsibility for accidents, damage, or injury to any persons or damage to public or private property caused by the movement of any oversize or overweight, or both, vehicle or load covered by the permit while upon public highways of the state.

2. The applicant or permittee agrees to indemnify and hold harmless the North Dakota Department of Transportation, the North Dakota Highway Patrol, their officers, and employees from any and all claims resulting directly or indirectly from the movement of an oversize or overweight, or both, vehicle or load on any public highway of the state of North Dakota.

PERMISSION FOR THIS MOVEMENT IS HEREBY GRANTED subject to compliance with provisions of the laws of the State of North Dakota and under the terms, conditions and restrictions contained herein and on the reverse side of this permit, and subject to revocation upon non-compliance.

Permit Issuing Official <i>[Signature]</i>	Signature of Applicant <i>[Signature]</i>	Validation No. (when necessary)
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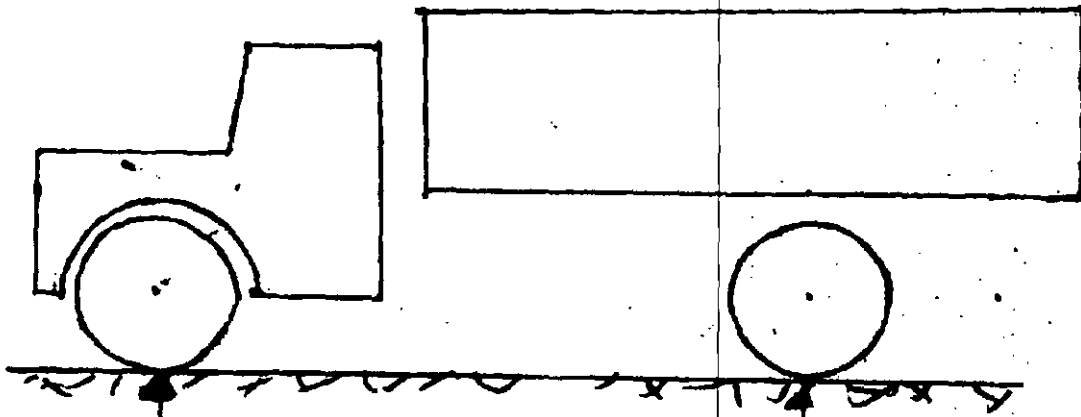
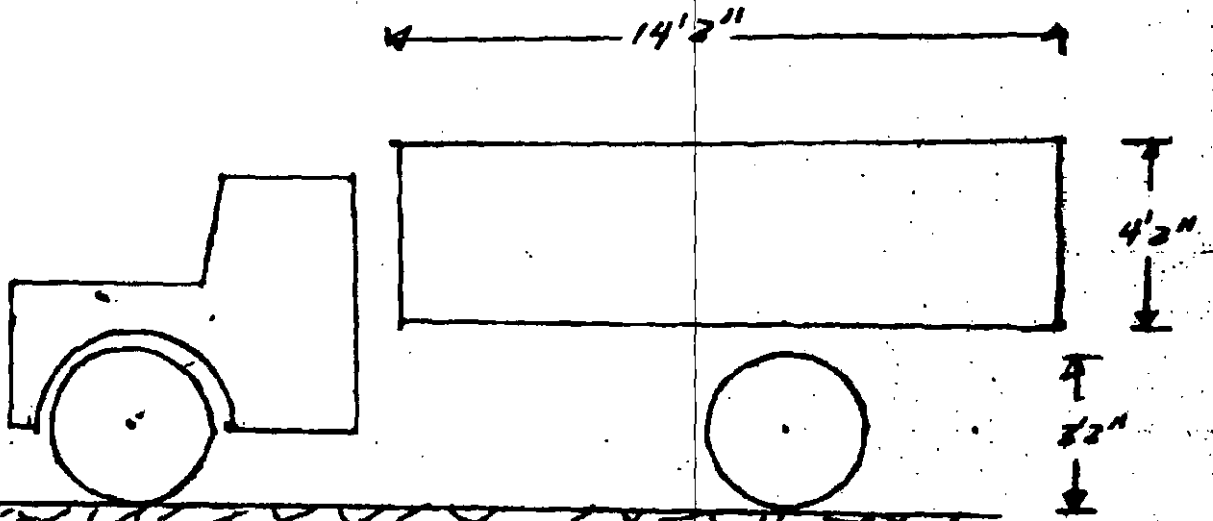
TOTAL FEES PAID  
**220.00**

This permit to be carried on vehicle during the above-mentioned movement. This permit shall be open to inspection by any peace officer or motor carrier inspector. See reverse side for additional requirements.

BNI Coal, Ltd. Jan 23 2007 1:55PM



Figure 1



3750#

5060#

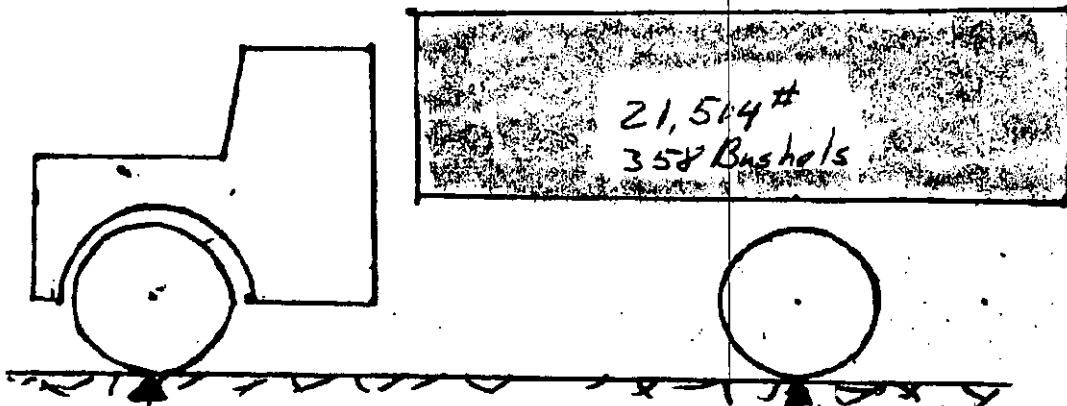
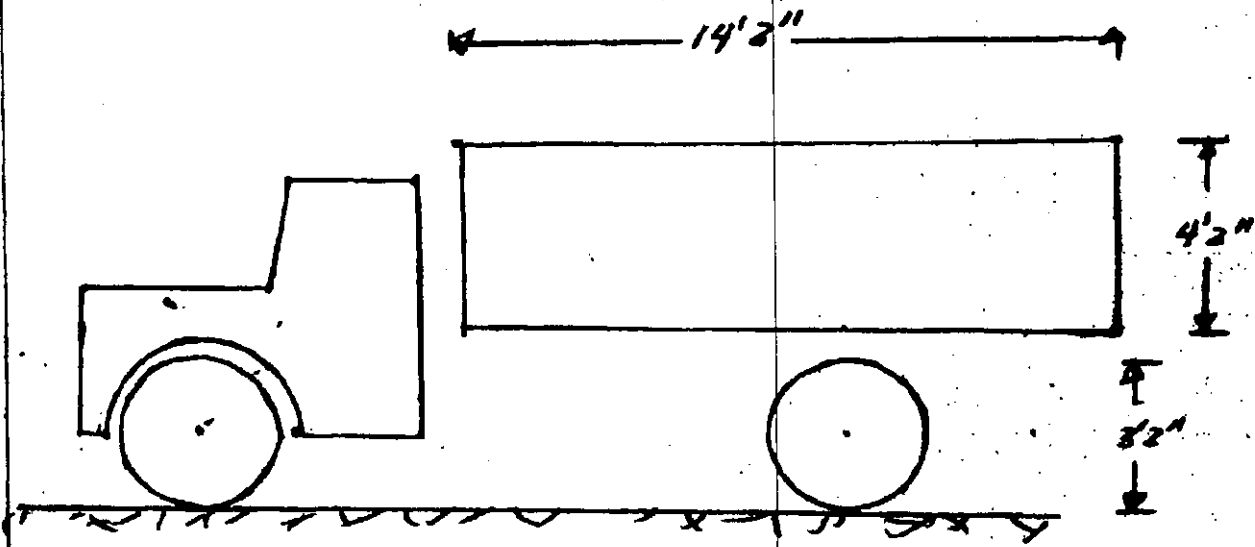
empty weight

22-142 100 SHEETS  
22-144 200 SHEETS



Figure 2

22-144 200 SHEETS



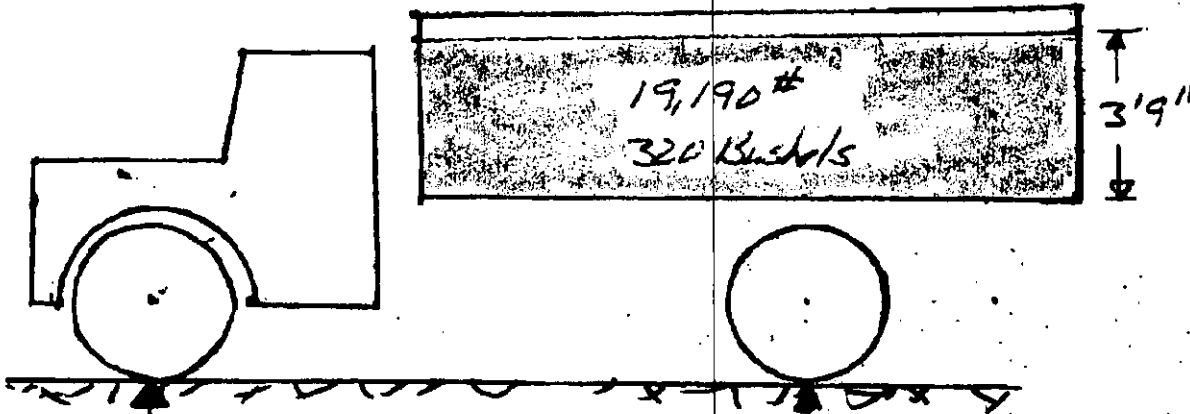
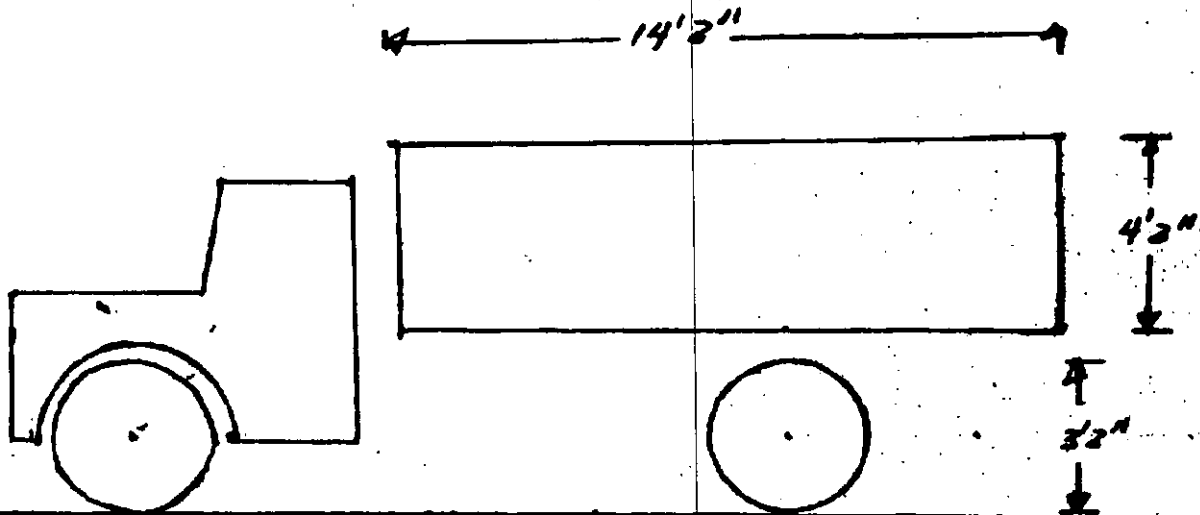
Box Level Full

5,286#

25,028#

30,314 G-VW

Figure 3



28,100# GVW

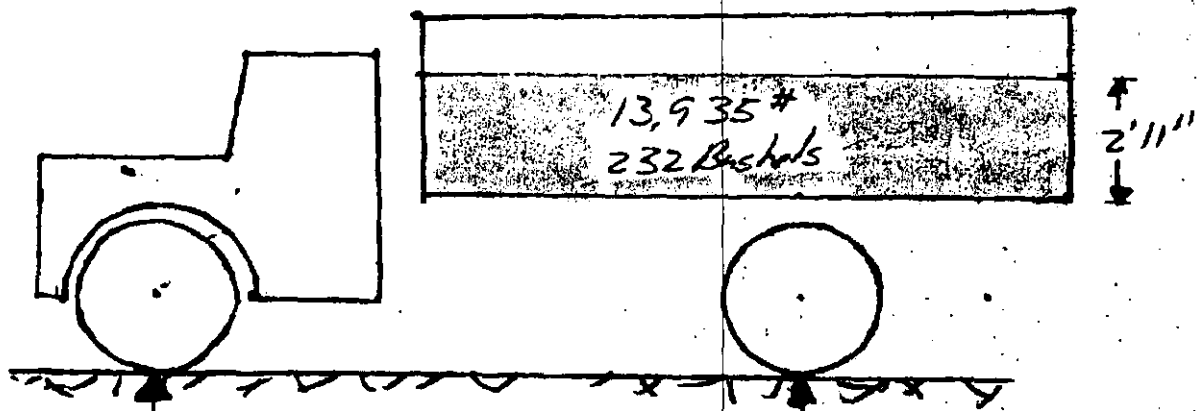
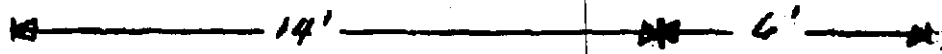
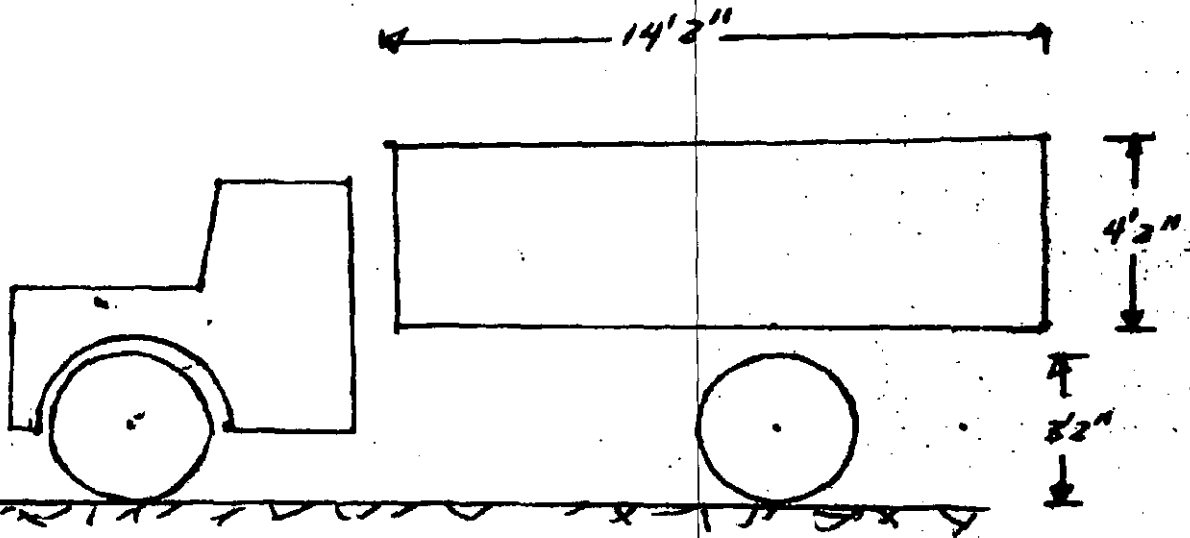
5,120# Front

22,979# Rear

22-143 100 SHEETS  
22-144 200 SHEETS



Figure 4



4745# Front

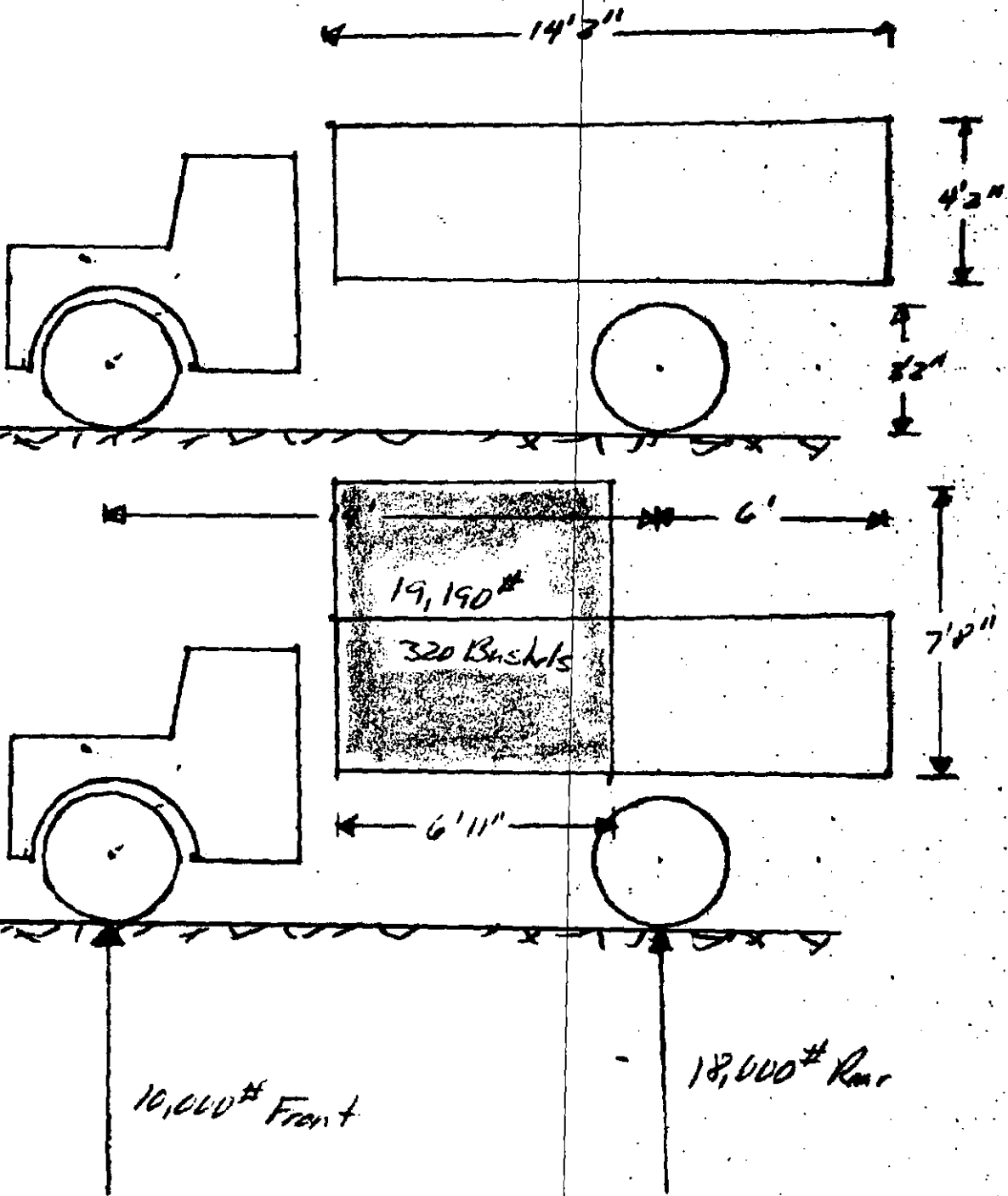
18,000# Rear

22,745 GVW

18,000# Rear Axle

22-144 300 SHEETS

Figure 5



22-162 100 SHEETS  
22-164 200 SHEETS



**SENATE TRANSPORTATION COMMITTEE**  
**January 25, 2007**

**North Dakota Department of Transportation**  
**Grant Levi, P.E., Deputy Director for Engineering**

**SB 2316**

---

Good morning, Mr. Chairman and members of the committee. I'm Grant Levi, Deputy Director for Engineering for the North Dakota Department of Transportation. Thank you for giving me the opportunity to present information to you today. I'm here to testify in opposition to SB 2316. SB 2316 would remove all requirements for a single vehicle with a single-drive axle to comply with section 39-12-05.3 which limits the axle weights and establishes the five hundred fifty pounds for each inch of tire width requirement.

We understand and support the need to move commodities and promote the economic viability of the state. We currently have a number of ongoing initiatives to accomplish that goal. As we work towards accomplishing that goal, we believe it is essential to ensure the state's large investment in the transportation system is protected. The best way to protect that investment is to only allow trucks to haul gross vehicle weights and axle weights the system can carry.

Every axle passing over a highway consumes a portion of the pavement's life. With each pass of a load, the pavement experiences forces that eventually lead to the deterioration of the pavement. Extensive testing over the last fifty years has shown that the amount of pavement life consumed by heavy axles greatly exceeds the amount of life consumed by lighter axles. In fact, the relationship is exponential, meaning that just a small increase in axle load leads to an ever increasing damage rate to the pavement. For example, as illustrated in the attached South Dakota Local Transportation Assistance Program report:

- a legal 20,000 pound axle load consumes a thousand times more pavement life than a 2,000 pound automobile axle
- a 22,000 pound axle load consumes 46 percent more pavement life than a 20,000 pound axle load
- a 24,000 pound axle load consumes 107 percent more pavement life than a 20,000 pound axle load

We are willing to continue working with industry to address truck size and weight issues. Things such as wider tires and the addition of tag axles are examples of solutions that can allow for legal hauling of increased weights. These solutions call for an investment by the individual or company owning the truck, but offset the tremendous public cost that can result from relaxing weight regulations and allowing heavier axle loads.

It is important to continue to maintain the quality of our transportation system for the citizens of North Dakota. Maintaining the present weight requirements is an important component in maintaining our system.

Mr. Chairman, I would be happy to answer any questions at this time.

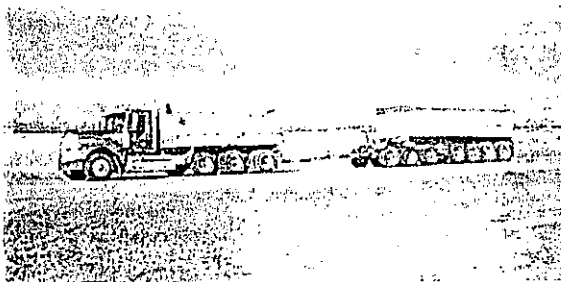
# The Connection

*Between Transportation Technology and Local Government*

Volume 15, Number 4 Winter 2002

## Truck Weights and Highways

Illegally overweight vehicles damage South Dakota roads, shorten road life, and increase costs to both the trucking industry and taxpayers. During the past several years, the South Dakota Legislature has enacted laws to protect state and local highways from damage caused by illegally overweight vehicles:



It is important for those responsible for funding, building, and maintaining highways to understand the reasons behind truck weight regulations and to be able to explain them when shippers, haulers, business contacts, and personal acquaintances inquire about them.

- In 1996, the Legislature limited the maximum weight allowed on axles (other than steering axles) to 500 pounds times the total width, in inches, of all tires mounted on the axle. This action ensured that the weight carried on axles fitted with single tires (as opposed to conventional dual tires) would not exceed pavements' load capacity.
- When the Legislature raised the state fuel tax in 1999, it also increased civil penalties for overweight trucks to safeguard the public's investment. The graduated penalty schedule discourages intentional violations that most severely damaged roads and bridges, but imposes more modest fines for lesser, unintentional overweights.
- To protect the public investment in local roads and bridges, the Legislature enacted a law requiring the Department of Transportation to monitor how diligently counties prosecute overweight violations and, if necessary, to withhold funding from counties that fail to act responsibly.

Pounds Overweight	Civil Penalty per Pound
1,000-3,000	\$0.05
3,001-4,000	\$0.15
4,001-5,000	\$0.225
5,001-10,000	\$0.375
>10,000	\$0.75

The South Dakota Department of Transportation supports all of these legislative actions, which have improved awareness and compliance with truck weight regulations. Fewer vehicles are operating seriously overweight, preventing needless damage to roads and bridges and saving taxpayers millions of dollars.

### South Dakota Supports Trucking

South Dakota values the trucking industry and its contribution to the economy and well being of the state. Nearly everything we own, eat, use, grow, or manufacture is carried by truck on at least part of its journey.

Because of the importance of trucking, the South Dakota Legislature and other branches of state government have historically adopted rules and procedures that help the industry to operate competitively:

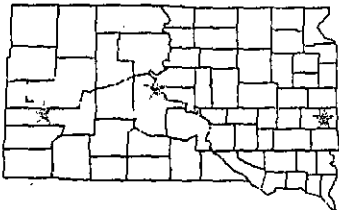
- To ease regulatory burdens, the Department of Revenue has joined the International Fuel Tax Agreement and the International Registration Plan. Both enable motor carriers to register in just South Dakota but operate in all states and provinces. Efforts are underway to provide online IRP and IFTA services to the trucking industry.
- Unlike most states, South Dakota does not impose absolute gross weight limits on trucks. Instead, it allows essentially unlimited gross weight, provided the load is supported by enough tires and axles to prevent road and bridge damage.
- South Dakota grants tolerances for hauling agricultural loads. Loads from field to farm are allowed to weigh 10% more than the normal weight limit, while loads from farm to market are allowed 5% more than normal.
- To help truckers comply with weight regulations, the Highway Patrol will, without charge, weigh vehicles and instruct haulers on proper loading.

*Continued on the next page*



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## The Connection

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- Together with the Department of Revenue and the Highway Patrol, the Department of Transportation has developed an automated permitting system that allows truckers to obtain permits online and quickly identifies safe routes for movement of oversize and overweight vehicles.
- To reduce delays and improve traffic safety, the Department of Transportation will replace the port of entry at North Sioux City with a new facility near Jefferson in 2003. Through use of in-motion weighing and vehicle transponders, the new port will allow truckers with good safety records and legal weights to bypass the port, saving valuable hours of operating time.

## The Need to Be Legal

Why are truck weight regulations so important? It's really a matter of dollars and cents, because roads and bridges have to be designed, built, and maintained to carry heavy axle loads. The heavier the axle loads, the more expensive roads and bridges become.

Axle Weight (pounds)	Pavement Life Consumed*
2,000	0.001
10,000	0.06
18,000	0.66
20,000	1.00
22,000	1.46
24,000	2.07

\*All loads compared to a legal 20,000-pound load

Every axle passing over a highway consumes a portion of the pavement's life. With each application of load, the pavement experiences compression and bending that eventually lead to rutting and cracking. Extensive road tests over the past fifty years have shown that the amount of pavement life consumed by heavy axles greatly exceeds the amount of life consumed by light axles.

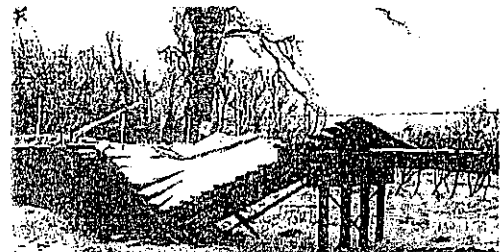
Two important concepts are evident from this table:

- First, heavy axles consume much more pavement life than light axles. Even a legal 20,000-pound truck axle consumes a thousand times as much pavement life as a 2,000-pound automobile axle.
- Second, the amount of life consumed rises much faster than the axle weight. For a seemingly modest 10% increase in weight (from a legal 20,000-pound axle to an overweight 22,000-pound axle), the amount of consumed life soars by nearly 50%. A 20% overweight consumes more than twice as much pavement life as the legal load.

Cost per Mile to Construct	
Interstate 4-lane highway (concrete)	\$1,900,000
State 2-lane highway (concrete)	\$941,000
State 2-lane highway (asphalt)	\$775,000
Secondary 2-lane highway (asphalt)	\$476,000
Thin asphalt overlay (24' wide)	\$112,000

## Damage to Bridges

Damage from illegally overweight loads is not confined to pavements. Bridges prematurely age, just as pavements do, when subjected to illegal loads. If the loads are great enough, they can actually destroy a structure.



An example from Tripp County is pictured, but it is not the only case. In the past two years alone, six county bridges had to be completely replaced because of damage from illegally overweight trucks:

- Two bridges in Moody County had to be replaced at a total cost of \$692,000.

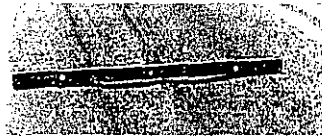
- Two Brookings County bridges were rebuilt at a total cost of \$295,000.
- One Faulk County bridge had to be replaced at a cost of \$125,000.
- The bridge in Tripp County was replaced with culverts at a cost of \$18,000.

These illegally overweight loads not only cost counties more than \$1.1 million, but also deprived other road users of convenient access to their homes and farms. In each case, the board of commissioners had to declare an emergency and close a road until a new structure could be built.

As costly as these cases were, they represent only a portion of the bridge damage attributable to illegally overweight loads. Many other structures have certainly been damaged, but in ways that are not yet apparent.

### The Link to Highway Safety

Truck weight enforcement is not only a matter of economics, but also a matter of public safety. Illegal loads not only make roads rougher, but also create deep ruts that can fill with rainwater or ice, making driving more dangerous for everyone.



### Frequently Asked Questions

People occasionally ask whether weight restrictions could be relaxed without increasing road damage. Common questions are:

- *Can trucks reduce speed rather than reduce load?* This question often arises in the spring, when load restrictions are needed to protect pavements weakened by the spring thaw. Unfortunately, even though some local agencies still try to avoid load limits by reducing speed limits, this practice does not work. In fact, road damage increases significantly when heavy vehicles are driven more slowly.
- *If a truck's gross weight is legal, why do axle weights matter?* This question is sometimes raised by persons cited for overweight axle or axle group violations, even though the total (gross) weight of their vehicle did not exceed the legal limit. However, pavement damage from two axles—one light and one heavy—actually exceeds the damage from properly loaded axles. The extra damage created by the overloaded axle exceeds the reduced damage created by the lighter one.
- *If agricultural vehicles with low-inflation tires can safely carry heavy loads in fields, why can't they operate loaded on highways?* Even though vehicles like chemical applicators and grain carts can transport very heavy loads in fields, they seriously damage gravel and paved roadways

when loaded beyond legal limits. The surface is damaged because the vehicles' lugged tires concentrate the load into small contact areas. The underlying layers fail because they cannot withstand the total load imposed upon them. These loads also pose a serious problem for bridges, especially on county and township roads.

### The Need for Responsible Hauling

State and local governments' responsibility to provide mobility and safety cannot be accomplished if illegally loaded vehicles prematurely consume the life of roads and bridges. Providing a system that is economical, comfortable, and safe depends not only on the government's investment of time, effort, and money, but also on the responsible behavior of highway users.

The vast majority of South Dakota haulers operate legally. Of the nearly 600,000 vehicles weighed each year, only about 3,000—one half of one percent—are cited for overweight violations. Of those cited, only 600 are severely enough overweight to be assessed civil penalties exceeding \$100.

While a small number of haulers knowingly operate illegally, their disregard for weight limits creates costly damage that other, responsible taxpayers must pay for. Controlling the irresponsible behavior of these intentional violators is impossible without effective enforcement and prosecution.

Recent efforts to control illegally overweight vehicles have clearly begun to reduce the rate of grossly overweight loads. In 2000, 8.6% of overweight vehicle citations were for loads more than 10,000 pounds over the legal limit. The rate decreased to 6.0% in 2001, and 5.9% in 2002. Overall, the incidence of grossly overweight loads has dropped by nearly a third since more stringent penalties and enforcement were enacted.

Relaxing weight regulations and enforcement would erase the progress that has been made to protect the public investment in state and local roads. In the words of Ted Eggebraaten, Brookings County Highway Superintendent, "If we lose the control we have with the new overweight laws in place, it will only add to our problems with roads and bridges. Brookings County would not be able to keep up our road system maintenance if the control is taken away." The Department of Transportation also considers sound weight enforcement essential to its mission to "provide a transportation system to satisfy the diverse mobility needs" of travelers, shippers, and haulers in South Dakota. Especially in a time of limited funding, protecting the existing highways from unnecessary damage is clearly the wisest course of action.