

ALASKA LEGISLATURE

1027

HOUSE and SENATE FINANCE COMMITTEE FILES, 1993-1994

101

# FISCAL NOTE

No. 5

Bill Version: CSHB 299(FIN)

(H) Publish Date: 3/25/94

STATE OF ALASKA  
1994 LEGISLATIVE SESSION

Revision Date: 3/24/94 Dept. Affected: Public Safety  
 Title: An Act relating to revocation of a driver's BRU: Motor Vehicles  
license....and providing for an effective date. Component: Driver Services/Field Services  
 Sponsor: Representative Toohy  
 Requestor: (H) FIN COMPONENT SERIAL NO. 500, 502

EXPENDITURES/REVENUES: (Thousands of Dollars) (inflation not included)

OPERATING	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00
PERSONAL SERVICES	126.1	126.1	126.1	126.1	126.1	126.1
TRAVEL	1.5	0	0	0	0	0
CONTRACTUAL	23.4	16.1	16.1	16.1	16.1	16.1
SUPPLIES	1.0	1.0	1.0	1.0	1.0	1.0
EQUIPMENT	42.0	0	0	0	0	0
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	194.0	143.2	143.2	143.2	143.2	143.2
CAPITAL EXPENDITURES						
CHANGE IN REVENUES (1005) <small>Revenue Code</small>	622.5	622.5	622.5	622.5	622.5	622.5

FUNDING: (Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF						
1005 GF/Program Receipts	194.0	143.2	143.2	143.2	143.2	143.2
1006 GF/MHTIA						
Other						
TOTAL	194.0	143.2	143.2	143.2	143.2	143.2

Estimate of current year (FY 94) impact: \$ \_\_\_\_\_

POSITIONS:

FULL-TIME	3	3	3	3	3	3
PART-TIME						
TEMPORARY						

ANALYSIS: (Attach a separate page if necessary.)  
See Attached

Prepared By: Juanita M. Hensley Phone: 465-2650  
 Division: Motor Vehicles Date: 03/24/94  
 Approved by Commissioner: *[Signature]* Date: 03/24/94  
 Agency: Richard L. Burton, Dept. of Public Safety

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Rev 01/84

Page 1 of 3

**COMMITTEE COPY**

*MHL*  
3/24/94

This bill will require the Division of Motor Vehicles to administratively revoke the driver's license of any person between the ages of 14 through 20 who has consumed or who is in possession of drugs or alcohol. The Division of Family and Youth Services (DFYS) reports approximately 1,200 youths between the ages of 14 through 17 are referred to their agency by police authorities for alcohol or drug offenses yearly. The Department of Public Safety Uniform Crime Report for 1992 shows approximately 1,300 persons between the ages of 18 through 20 are arrested or charged with drug and alcohol offenses (other than DWI) each year. The total number of youths whose driver's license or privilege to drive would be revoked is approximately 2,500. The Department of Public Safety Uniform Crime Report does not include 37 cities or rural communities.

In order to handle the additional 2,500 license revocations a year, and provide due process for the minor, one full-time Driver Improvement Specialist/Hearing Officer, and two full-time Motor Vehicle Representative I/II's would be required. The cost for personal services for a Driver Improvement Specialist/Hearing Officer is 52.8; the cost for two Motor Vehicle Representative I/II's is 73.3. The total for personal services is 126.1. The Driver Improvement Specialist and one Motor Vehicle Representative will be located in the Juneau Driver Services office and will handle the paperwork and hearings associated with administering the revocation of the driver's license. The second Motor Vehicle Representative will be located in the Anchorage Field Services section and will be used in the Motor Vehicle Field office to handle the reinstatement and issuance of a driver's license.

To revoke 2,500 additional driver's licenses a year takes over 30 processing steps per revoked license. It takes approximately 20 minutes to one hour to conduct an administrative hearing. Each processing step varies in the time it takes to complete. Complete accuracy is essential, as an error of entry onto a driving record could result in civil liability to the State. It takes approximately 20 minutes per applicant to reinstate a revoked driver's license; this time is exclusive of the time it takes a person to take the required tests; the person must make a new application for the driver's license or permit, take all of the required tests, and if the person is under the age of 18 a parent or legal guardian must give consent for the driver's license or permit and pay the reinstatement fee. Travel and per diem requested is to send the hearing officer to the National Judicial College for professional training in the fair hearing process.

Under existing law, each person whose license has been revoked must pay a \$100 fee when applying for reinstatement of his or her driver's license. This bill amends current law by requiring a reinstatement fee of \$250 for anyone who has had their driver's license suspended, revoked or limited more than one time. Assuming 90 percent of the minors who are eligible for reinstatement will comply with the reinstatement requirements and pay the \$100 fee, approximately \$225.0 will be generated annually as new program receipts/general fund revenue.

In FY93 the division reinstated approximately 5,300 driver's licenses where the person paid a fee of \$100. It is estimated that 50 percent or 2,650 have first time actions against their record and will continue to pay the \$100 fee and 50 percent or 2,650 of these drivers have prior actions against their record and will be required to pay the \$250 fee. The 2,650 drivers will be required to pay an additional \$150 which will generate an additional \$397.5 in new program receipt/general fund revenue. The total new program receipts/general fund revenue is \$622.5.



FISCAL NOTE

STATE OF ALASKA  
1994 LEGISLATIVE SESSION

No. 4  
Bill Version: CSHB 299 (JUD)  
(H) Publish Date: 3/9/94

Revision Date: March 9, 1994  
Title: "...revocation of a driver's license for illegal possession or use of a controlled substance...alcohol..."  
Sponsor: Representative Toohy  
Requestor: Representative Toohy

Department Affected: Department of Law  
BRU: Prosecution  
Component: All  
COMPONENT SERIAL NO. 0085 through 0090

EXPENDITURES/REVENUES:

OPERATING	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00
PERSONAL						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND &						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	-0-	-0-	-0-	-0-	-0-	-0-

CAPITAL						
---------	--	--	--	--	--	--

REVENUE						
---------	--	--	--	--	--	--

FUNDING:

1002 Federal						
1003 GF Match						
1004 GF						
1005 GF/Program						
1006 GF/MHTIA						
OTHER						
TOTAL	-0-	-0-	-0-	-0-	-0-	-0-

POSITIONS:

FULL-TIME	-0-	-0-	-0-	-0-	-0-	-0-
PART-TIME						
TEMPORARY						

Estimate of current year (FY94) impact: -0-

ANALYSIS: (Attach a separate page if necessary.)  
Please see the attached analysis.

Prepared by: Richard I. Peques, Director  
Division: Administrative Services Division

Phone: 465-3672  
Date: March 9, 1994

Approved by Commissioner: Bruce M. Botelho, Attorney General  
Agency: Department of Law

Date: March 9, 1994

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FISCAL NOTE

BILL NO. CSHB 299 (JUD)

STATE OF ALASKA  
1994 LEGISLATIVE SESSION

ANALYSIS CONTINUATION:

The House Judiciary Committee version of HB 299 adds a new section to AS 28.15 that provides for the revocation of a driver's license of a person that is at least 14 years of age, but not yet 21 years of age, for the possession or use of a controlled substance in violation of AS 11.17, or the possession or use of alcohol in violation of AS 04.16.050.

Revocation would be handled administratively by the Department of Public Safety if a police officer had probable cause based on personal observation that the possession or use occurred. The administrative process includes a provision for an administrative appeals hearing, as well as providing for subsequent judicial review. A police officer would be required to read a notice and to deliver a copy to the person advising that revocation will occur in seven days, unless the person requests an administrative review within the seven days. The written notice would serve as a temporary seven day license or permit, and the police officer would seize the person's license or permit if it is in the person's possession. Revocation would include the person's driver's license, permit, privilege to drive, or privilege to obtain a license or permit. A first revocation would result in a revocation for a period of 90 days; a second revocation would result in a revocation for a period of one year; and a third revocation would result in revocation for a period of three years. The bill also provides that the Department of Public Safety may not issue a new license or reissue a license to a person whose driver's license, permit, or privilege to drive has been revoked, under these provisions, unless the person is enrolled in or in compliance with, or has successfully completed and paid for (1) an alcoholism education and rehabilitation program, if the revocation resulted from the possession or use of alcohol, or (2) a drug rehabilitation treatment program if the revocation resulted from the possession or use of a controlled substance. Finally, the bill increases the amount of the reinstatement fee, from \$100 to \$250, for any person who seeks a driver's license at the end of the revocation period.

Current statute (AS 28.15.185) contains similar penalties for the same offense; however, the existing statute is limited to youths ages 13 through 17, and the penalties can be invoked only if the person is adjudicated by a juvenile court of misconduct involving a controlled substance or alcohol.

Because the revocation process will be handled administratively within the Department of Public Safety, the bill is unlikely to have a direct fiscal impact on the Department of Law. However, we are concerned that there will be a secondary impact caused by youthful offenders who drive while their license is revoked or who cannot obtain a license or permit during a revocation period. We also expect that there will be a larger number of revocations than now occurs under the existing statute, because the age span covered by the bill is greater and because revocation will not require an adjudication. Thus it appears that the incidence of DWLS offenses will increase. However, data is not available that would give any clear idea on the amount of increase that will result if the bill is approved. Consequently, fiscal impact costs have not been shown. We therefore caution that increasing prosecutor caseload at a time when revenues are decreasing, and at a time when the existing caseload is already increasing, will result in prosecutors being forced to decline prosecution of certain offenses in favor of prosecuting more serious offenses.

Finally, we note that the bill includes well-reasoned findings in respect to the dangers involved in mixing alcohol and driving and the particular danger to youths under the age of 21. However, no findings have been included in respect to controlled substances and the dangers they present to youths under the age of 21.

**HEB**

**300**

**HFFIN**

**FILE**

HOUSE COMMITTEE REPORT

(11)

Date Referred: March 11, 1994

FURTHER REFERRALS:

Date of Committee Action: 3/24/94 am

226-3807

The FINANCE Committee considered:

HB 300

HOUSE BILL NO. 300

LIABILITY: COMMERCIAL RECREATION ACTIVITY

"An Act relating to civil liability for commercial recreational activities; and providing for an effective date."

RECOMMENDATIONS:

be replaced with (S HB 300 (LUD)) [X] the same title [ ] a new title

[ ] have attached amendments(s)

[X] do pass

[ ] do not pass

[ ] no recommendations

[ ] individual recommendations

[ ] additional referral to the \_\_\_\_\_ Committee

ADOPTS: \_\_\_\_\_ letter of Intent

ATTACHES NEW FISCAL NOTE(S): (Dept)

APPROVES PREVIOUS: (Dept/Date)

[ ] fiscal impact \_\_\_\_\_

[ ] fiscal note(s) \_\_\_\_\_

[X] zero fiscal note Admin; DCED

[ ] zero fiscal note(s) \_\_\_\_\_

SIGNING DO PASS	DP	OTHER RECOMMENDATIONS	DNP	NR	AM
Ronald L. Larson Larson	X	Mike Navarre Navarre		X	
Mark Hamley Hamley	X	Jay Brown Brown		X	
Terry Martin Martin	X	Gene Thernquist Thernquist		X	
Ben Grossendorf Grossendorf	X				
Richard [unclear] [unclear]	X				

CO-CHAIRMAN'S SIGNATURE *Ronald L. Larson* Larson

FISCAL NOTE

STATE OF ALASKA  
1994 LEGISLATIVE SESSION

BILL NO. HB 300

Revision Date: \_\_\_\_\_  
Title: Civil Liability for Commercial  
Recreational Activities  
Sponsor: House Labor & Commerce Committee  
Requestor: \_\_\_\_\_

Department Affected: Commerce and Economic Development  
BRU: Insurance  
Component: Operations  
COMPONENT SERIAL NO. 354

Expenditures/Revenues:

OPERATING EXPENDITURES	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00
PERSONAL SERVICES	0	0	0	0	0	0
TRAVEL	0	0	0	0	0	0
CONTRACTUAL	0	0	0	0	0	0
SUPPLIES	0	0	0	0	0	0
EQUIPMENT	0	0	0	0	0	0
LAND & STRUCTURES	0	0	0	0	0	0
GRANTS, CLAIMS	0	0	0	0	0	0
MISCELLANEOUS	0	0	0	0	0	0
TOTAL OPERATING	0	0	0	0	0	0

CAPITAL EXPENDITURES	0	0	0	0	0	0
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CHANGE IN REVENUES ( )	0	0	0	0	0	0
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FUND SOURCE

1002 Federal Receipts	0	0	0	0	0	0
1003 GF Match	0	0	0	0	0	0
1004 GF	0	0	0	0	0	0
1005 GF/Program Receipts	0	0	0	0	0	0
1006 GF/MHTIA	0	0	0	0	0	0
Other	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0

Estimate of current year (FY 94) cost: \$ 0

POSITIONS

FULL-TIME	0	0	0	0	0	0
PART-TIME	0	0	0	0	0	0
TEMPORARY	0	0	0	0	0	0

ANALYSIS: (Attach a separate page if necessary.)

No fiscal impact.

Prepared by: Joan Brown, Administrative Officer  
Division: Insurance

Phone: 465-2597  
Date: 3/4/94

Approved by Commissioner: Paul Fuhs  
Agency: Commerce and Economic Development

Date: 3-7-94

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FISCAL NOTE

STATE OF ALASKA  
1994 LEGISLATIVE SESSION

BILL NO. CSEB 300(JUD)

Revision Date: \_\_\_\_\_  
Title: 'An Act relating to civil liability for commercial recreational activities. . . .'  
Sponsor: House Labor and Commerce Committee  
Requestor: House Finance

Department Affected: Administration  
BRU: Risk Management  
Component: Risk Management  
COMPONENT SERIAL NO. 71

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	0	0	0	0	0	0

CAPITAL EXPENDITURES	0	0	0	0	0	0
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CHANGE IN REVENUES ( )	0	0	0	0	0	0
------------------------	---	---	---	---	---	---

FUNDING SOURCE: (Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF						
1005 GF/Program Receipts						
1006 GF/MHTIA						
OTHER						
TOTAL	0	0	0	0	0	0

Estimate of any current year (FY 94) cost: \$ 0

POSITIONS:

FULL-TIME	0	0	0	0	0	0
PART-TIME	0	0	0	0	0	0
TEMPORARY	0	0	0	0	0	0

ANALYSIS: (Attach a separate page if necessary.)

Prepared by: J. Brad Thompson, Director  
Division: Risk Management

Phone: 465-5723  
Date: \_\_\_\_\_

Approved by Commissioner: Nancy Bear Usera  
Agency: Department of Administration

Date: 3/14/94

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P.O. Box 1353  
Valdez, AK 99686  
Phone: 907-835-4300  
Fax: 907-835-5679

February 9, 1994

Honorable Bill Hudson  
Alaska State Legislature  
State Capitol (MS 3100)  
Juneau, Alaska 99801-1182

Dear Representative Hudson:

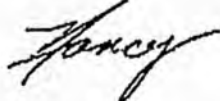
I am writing to you on behalf of the Alaska Wilderness Recreation and Tourism Association's members to request that you schedule HB 300 An Act Relating to Civil Liability for Commercial Recreation for hearings and move it out of your committee.

This bill establishes the responsibilities of tour operators and participants. It increases the safety of commercial recreational activities through better preparedness on the part of tour operators to respond to a medical situation and increased awareness by trip participants of the inherent risks. The bill reduces the likelihood of frivolous suits which are becoming a significant problem in the industry elsewhere. At AWRTA's annual meeting last year, a representative from AWRTA's group insurance company gave several examples of insurance scams that "tourists" are running in other states.

Other states, including Wisconsin and Colorado, have passed similar legislation. It has resulted in significant reductions in insurance premiums. Insurance premiums in Alaska are extremely high for small tour operators. Our own company, Alaska Wilderness Sailing Safaris, pays about \$10 a day per person in insurance costs for guests to walk in the Chugach National Forest. This is in addition to our insurance for the time they spend sailing. For Alaskan commercial recreation businesses to remain competitive price-wise with other states, we must have comparable insurance rates.

On behalf of our 230 business members, I encourage you to pass this bill out of committee as soon as possible.

Sincerely,



Nancy R. Lethcoe



## Marine Adventure Sailing Tours

---

Representative Bill Hudson  
Chair, Labor and Commerce Committee  
Alaska State Legislature  
State Capital Building  
Juneau, Alaska 99801-1182

February 16, 1994

Dear Bill:

There are, this session, a few bills floating around the legislature in which I am interested. As one of your constituents, I thought you would like to know my thoughts on them. I offer also whatever help I can give to you and your staff regarding these actions.

**HB 300** "An Act relating to civil liability for commercial recreational activities; and providing for an effective date."

This bill may be uninteresting to many in the times of such fiscal distress, but to me and many other operators of commercial outdoor businesses, this is a desirable action. I do not believe that it will reduce our insurance costs much, but it will offer more protection to us in the case of some legal action. I have been operating for 12 years and have never had an accident, but the possibility always exists.

In my business, I use an informational form which reads very much like HB 300. It simply advises my clients that Alaska can offer some difficult challenges and that if there is any doubt about anything, ask. As a concessionaire for the Glacier Bay National Park, I am advised by NPS to have clients sign a release (enclosed) which reads again like HB 300. The U.S. Forest service also requires guiding insurance and since most of Southeast is in the Tongass, HB 300 could be quite influential on the USFS regulations.

I won't go on about this, but instead urge you to hear the bill and move it out of committee before the rush of other matters befalls you. I don't see any opposition to the bill as it is currently written and I expect a zero fiscal note. This is not a tort reform bill, but rather the recognition that Alaska still has a wild and wonderful outdoors.

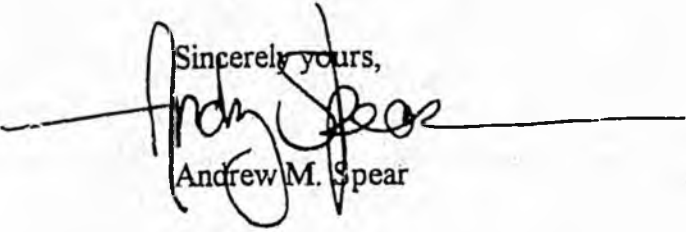
**HB 238/SB215 Funding for the Oil and Hazardous Substance Release Response Fund (470 Fund)**

I'm sure you know my sentiments on these actions, but I will ask your assistance in keeping the "470 Fund" intact. During my time as the manager of the ADEC Oil Pollution Control Program, I found that small oil spills are by far a more serious problem than is recognized by the public and their representatives. When the *Exxon Valdez* hit the skids, I was introduced to the devastation of both the natural environment, and the very fabric which holds together our local communities. Any defunding and de-emphasis on the prevention and control of oil pollution is a false economy. Take a minute and recall some of the telephone calls you got during the *Exxon Valdez* disaster. I shudder when I do.

Finally as I write this infrequent letter, I must address again a defunding issue; the ATMC. You know that I am a small operator, but that I live and participate in my local community. I spend just about everything here and believe that I help make Alaska a better place. There are many others like me, but because we are small, spending \$5,000 for an ad in a national magazine is a heavy burden. There is little out there to help us compete in a very competitive market, but one thing that does help is the ATMC. I get more business from the "Alaska Planner" than from any other source. Please do not defund us any more. At least, see if we can maintain programs that keep our businesses here rather than favor large, foreign flag operations. If the Governor wants to find some money, maybe he can sell the road to Cordova or perhaps save a little aviation gas and stop the wolf kill. I'm feeling the pinch from the wolf kill boycott so I don't need to take another blow by way of a defunded ATMC. I've said enough.

Thank you for your attention and patience. I will come in to talk to Linda about HB 300 and perhaps we can meet as well. In the mean time, my best to you and your staff. Say hello to Lucy and keep up the good work

Sincerely yours,

  
Andrew M. Spear

- NO NEED TO ANSWER, Bill.

Copy AWARTA

JUST WORKING ON  
A NEW ONE.

DRAFT

## INFORMATION, BILL OF RIGHTS and TERMS

The purpose of this document is to set out the terms and conditions of liability for persons on the sailing vessel *ADVENTURESS* and its auxiliary equipment as operated by Andrew M. Spear who is also the owner of the vessel or his staff. This document does not relieve the owner from operating the vessel in a reasonable manner and does not remove your right to protection from acts of gross negligence. However, The *ADVENTURESS* is a sailing vessel and like most sailing vessels, it has numerous lines, wires, deck fittings and other obstacles which can be dangerous. As with all boats, it rolls, pitches and yaws and while under certain points of sail, it leans considerably. In addition, the *ADVENTURESS* is equipped with a small outboard powered inflatable tender boat. Because this is a light and fast vessel, it provides even greater risks. Life jackets should be worn at ALL TIMES when using this boat. Passengers who use this boat, do so entirely at their own risk. Should you rent, request or bring your own kayaks, MAST will not be liable for

The above conditions are to be expected and by being a passenger on this vessel you are accepting these elements of risk. It is also made clear here that:

It is set out here that the owner of this vessel is not in any way liable for accidents resulting from actions of passengers either to themselves or to other passengers. By way of example such actions include:

1. Injury caused by leaving the vessel without direction from the operator; eg. jumping onto the dock, jumping into the water and jumping into another boat.
2. Burns caused by hot foods or beverages
3. Accidents caused by intoxication
4. Tripping, slipping and falling except where the operator is grossly negligent
5. Rope burns or other line handling injuries
6. Accidents caused by Alaska's different fish and wildlife or the passenger, attempts to catch or photograph them. It is also recognized that passengers unfamiliar with the way of boats present considerable risk to the owner/operator and to the vessel and that risk is accepted, however, passengers will be expected to act in a reasonable manner and will be responsible for injuries and damages they may cause deliberately, by gross negligence or actions of malicious intent. Finally, as passengers, you should be familiar with:

1. The location and operation of all lifesaving equipment,
2. The emergency procedures, and
3. The location and operation of fire extinguishers.

**IF YOU DO NOT KNOW, ASK.**

I have read and understand this notice \_\_\_\_\_

VISITOR'S ACKNOWLEDGEMENT OF RISK  
(SAMPLE)

I recognize that there is an element of risk in any adventure, sport or activity associated with the outdoors. I am also fully cognizant of the risks and dangers inherent in \_\_\_\_\_ (activity(s)). Knowing of the inherent risks, (may include specific risks) dangers and rigors required of said activity(s), I certify that I am and my family, including minor children are fully capable of participating in the said activity(s). Therefore, I assume full responsibility for myself, my family, including minor children for bodily injury, death and loss of personal property and expenses thereof as a result of my negligence or the negligence of my family participating in said activity(s) except to the extent such damage or injury may be due to the negligence of \_\_\_\_\_ (concessioner). I further understand that \_\_\_\_\_ (concessioner) reserves the right to refuse any person it judges to be incapable of meeting the rigors and requirements of participating in \_\_\_\_\_ (activity(s)).

Name of Participants:

Self \_\_\_\_\_

Spouse \_\_\_\_\_

Minor Children \_\_\_\_\_  
\_\_\_\_\_

I have read, understand and accept the terms and conditions stated herein and acknowledge that this agreement shall be effective and binding upon the parties during the entire period of participation in the said activity(s).

Parent/Guardian \_\_\_\_\_

Customer Signature \_\_\_\_\_

Date \_\_\_\_\_

It is also understood that due to the unavailability of liability insurance that (concessioner) does not have such coverage and in the event of an accident resulting in bodily injury, death or loss of personal property (concessioner) ability to compensate me or members of my family may be limited.

NOTE: Form may be modified to provide for the signature of each individual member of a group.

## INSURANCE AND INDEMNITY

1. GENERAL

The Concessioner shall save, hold harmless, defend and indemnify the United States of America, its agents and employees for losses, damages or judgments and expenses on account of fire or other peril, bodily injury, death or property damage or claims for bodily injury, death or property damage of any nature whatsoever, and by whomsoever made, arising out of the activities of the Concessioner, his employees, subcontractors, or agents under the contract. The types and amounts of insurance coverage purchased by the Concessioner shall be approved by the Secretary.

At the request of the Secretary the Concessioner shall annually, or at the time insurance is purchased, provide the Secretary with a Statement of Concessioner Insurance and Certificate of Insurance as evidence of compliance with this section and shall provide the Secretary thirty (30) days advance written notice of any material change in the Concessioner's insurance program hereunder.

The Secretary will not be responsible for any omissions or inadequacies of insurance coverages and amounts in the event the insurance purchased by the Concessioner proves to be inadequate or otherwise insufficient for any reason whatsoever.

2. PUBLIC LIABILITY

The Concessioner shall provide comprehensive general liability, or protection and indemnity, insurance against claims occasioned by actions or omissions of the Concessioner in carrying out the activities and operations authorized hereunder. Such insurance shall be in an amount commensurate with the degree of risk and the scope and size of such activities authorized herein, but in any event, the limits of liability shall not be less than the following amounts per occurrence covering both bodily injury and property damage:

<u># of passengers</u>	<u>Minimum Amount</u>
Up to 6	\$ 300,000 per occurrence
7 - 12	500,000 " "
13 - 20	1,000,000 " "
21 - 50	1,500,000 " "

If claims reduce available insurance below the required per occurrence limits, the Concessioner shall obtain additional insurance to restore the required limits. An umbrella or excess liability policy, in addition to a Comprehensive General Liability Policy, may be used to achieve the required limits.

From time to time, as conditions in the insurance industry warrant, the Secretary reserves the right to revise the minimum required limits.

All liability policies shall specify that the insurance company shall have no right of subrogation against the United States of America or shall provide that the United States of America is named an additional insured.

The Concessioner shall also obtain the following additional coverages at the same limits as required for Comprehensive General Liability insurance unless other limits are specified below:

- (1) Outfitters and Guides (if shore excursions are planned)
- (2) Liquor Liability (if liquor is served)
- (3) Product Liability (including food)
- (4) Alaska Statutory Workers' Compensation
- (5) Auto Liability (if autos are used in the park)

sugar-free baking  
3 temporary line  
P.O. Box 10  
Healy, AK 99743-0010  
907-683-2402

Rep Bill Hudson  
Alaska State Legislature  
Rm 5 31100  
Juneau, AK 99801-1182

Rep. Bill Hudson

We implore you for your help  
in getting AB 300 Civil Liabilities for  
Commercial Recreation Activities before the  
House Judiciary and passed.

We give horseback tours north  
side of Denali Park milepost 245 at  
Healy, AK. This past '93 season some  
2600 tourists rode with us for one  
to two hrs. This insurance  
coverage cost \$8700<sup>00</sup>. This year '94  
season coverage will be for approx-  
imately \$12,000<sup>00</sup> for about 5200 clients  
we have been doubling for 5 yrs.  
don't afraid to be sued for "frivolous  
actions" on the part of Client riders.  
Last year was our first year of profit  
\$406<sup>00</sup>. We employ 8 to 10 people  
for May to September. We pay \$23,000<sup>00</sup>  
in wages this past season.

We pay \$1141 - Comp insurance,  
\$1500<sup>00</sup> in vehicle client liability, and  
\$15,000 - horse feed, \$22,500 for 15 head of  
horses, \$1360<sup>00</sup> land use + CD, \$500<sup>00</sup> in  
transporter, land use fee, Business license.

This is not the expenses of the  
business. This is paid out before the  
doors open.

(2)

The first ride could be the last  
in the client decides to sue

She's past season a train car  
manager rode a "camp ride" (free)  
She horse bailed from Bear Steer,  
she fell, broke 3 fingers, sent  
in her bills, became well, crush  
the same fingers, billed but insurance  
some \$4800 - This included, cat sc.  
KXC, urine tests & Rays, & therapy and  
pap smear, office calls. The insurance is  
still pending. No Safety or negligence cited

Another client boarded her horse  
while waiting to leave, her horse took a step  
forward, she panicked, pulled hard, bac  
backing the horse till finally he tripped  
over a small bush, dropped his hip,  
she slipped off, after losing her balance.

"No harm done," she said, "asked for a  
different horse, made the ride (I was  
signed guest book" This is the only way  
to see Alaska close up & left.

She rode the train to the Cruise She  
took a plane home to Iowa. From  
the moment she boarded the train  
she deteriorated badly becoming restricted  
to a walker only. She sued for med  
bills, therapy, Gardner, housekeeper,  
and pain, Loss of income. She is  
a professional writer & gave  
gardening seminars.

Lucky for us, we had a vet check  
the horses. All received shots and

were in good shape as well as well-  
mannered manners ~~the~~ said they  
were well post conditioned, post  
trained. By this time she also  
said she was bucked off. Our  
help had been non-existent and  
that Princess Tour hadn't paid  
attention to her complaints.

We've had 5 yrs of quality, professional  
service for Princess Tour clients.  
We strive for safety first, we  
give a safety talk, horsemanship talk  
and information regarding possibilities  
for an accident if you ride. We pull  
no punches in case some one is  
afraid or wants to change their  
mind we encourage them  
not to go for the ride.

We generally have been treated  
fairly but every bushel has a  
"bad apple". We love showing off  
Alaska by horseback. But still  
we feel "threatened" by the frivolous  
lawsuit. We need this bill-passe  
for our protection so we don't  
have to give up the idea of  
giving rides, over nite trips,  
3 day + 5 day trips. Please protect us.

If you have any questions  
Please call - - 907 683-2402  
anytime

Phyllis A. Stickle

Sugar Leaf Packing, Transport. Inc.

2-13-94

P.O. Box 10

Healy, AK 99743-00

Jeanette James  
Alaska State Legislature  
MS 31100  
Juneau, AK 99801-1182

Ms. James,

I implore you to please help get Bill:  
HB 300 Civil Liabilities for Commercial  
Recreational Activities before the House  
Judiciary and passed.

We give horseback tours beside  
Denali Park line on the Healy side,  
milepost 245. We gave over 2600 rides  
last summer for one and two hours.  
We paid \$8,700.00 for liability coverage  
from Cathcart insurance.

Still we are "always on guard"  
for that one frivolous lawsuit that  
could ultimately wipe us out of  
business.

We have a very good safety record  
still one person has sent all their  
medical bills, for 6 months, to be  
paid by our insurance. She fell  
off a horse that bolted from the scent of  
a bear. She was riding camp (free)  
from Greysine to learn about the trail  
ride. She was a rail car manager.  
She broke 2 fingers in the fall. They  
healed & she crushed them later  
doing something else. The matter  
is pending at this time. She  
was 38 yrs old.

another lady client mounted a horse and was waiting for her guide to mount along with 3 other members of her family. She was 25 yrs. She was going to ride because the other members wanted to ride. Her horse moved a step, she panicked, in spite of being asked to let up on the reins, she pulled back hard, continuing to pull. She caused the horse to back up until he tripped one foot on a bush. This caused that hip to drop on the horse unbalancing the lady, she slipped off & onto the ground upon her hip.

She was helped up and asked for a different horse. We obliged. She made the one hour ride. Stationary pen "this was the only way to see Alaska" up close. By the time she had returned home by rail, cruise ship & plane to Canada she was unable to walk without a walker & was suing us for a gardener housekeeper, pain medication all due to the one hour ride, falling off the horse. She was a gardener, writer & seminar gardener. She had a condition that had deteriorated. Our insurance is handling the matter.

the best become unable to do  
Remmie. She said the horses  
were in poor condition, poor manure,  
and she had been poorly treated.  
By Angus they employed and burned  
down. We are lucky we had  
Sutton, the horse was checked,  
and their condition was very good.  
The amount of riders satisfied &  
the quality of rides and guest  
treatment. Safety is number  
one in our camp any. We have  
been in business 5 yrs with  
Bumma. And in horse business  
for 9 yrs. We are reputable  
business.

We give safety and information  
tells prior to each ride for inform-  
ation. Horseman and to give  
each guest a chance to "back"  
out gracefully should they choose to  
do so.

Generally, we are treated fairly  
by most customers. We like  
showing off the "classy" horses  
but still get the poor featured  
by "junk", "low" suits by a few bad  
apples.

We feel we have to watch our  
backs all the time.

We employ 8 to 12 employees  
every summer. May to September  
Approximate \$23,000<sup>00</sup> payroll.

at costs \$1,141<sup>00</sup> for workmens  
comp, \$1261<sup>00</sup> for liability for  
Clients in our vehicles and  
this summer our liability for  
Client riders will be about  
\$12,000<sup>00</sup> or more for coverage.

Horse feed \$15,000<sup>00</sup>

Horses - 15 22,000<sup>00</sup>

land use + CD 1360<sup>00</sup>

licenses 500<sup>00</sup> (transporters  
business, land use  
fee)

all of this before we open  
the door for business... a business  
that could be closed instantly  
by one large suit

we work 16 hrs a day  
every day and have yet to  
profit but this could be the year  
we do. We've incorporated  
the business.

We would greatly appreciate  
your help with \$300. At  
least there would be a lite  
at the end of the tunnel.

This has been like Russian  
Roulette still now.

Sincerely

Thylls A. Strick  
office manager  
Rick Strick, Jr.  
Owner

Any Questions? - 907-683-2402

Printed On Recycled Paper



Dear Representative Hudson -

We urge you to schedule HB300 regarding civil liability for commercial recreation.

The bill would serve to reduce insurance costs for operators, a very high cost for us all. Other states have passed similar legislation with good results.

Having the bill out of committee would do great service to small tourism companies in Alaska.

Thank you for listening,  
Dave Thorne President

P.O. Box 389 • CERDWOOD, AK 99587

DIRECT: 907-785-2928 • OUTSIDE ALASKA: 800-554-8750 • WITHIN ALASKA: 800-478-4100

FAX: 907-785-2150

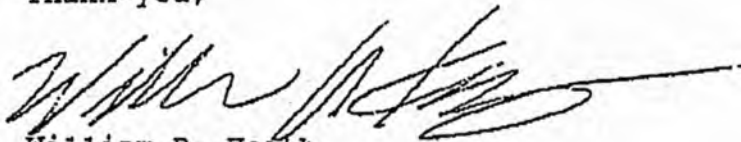
Kenai Peninsula Hike'n'Lunch Tours  
203 Pamela Ct.  
Kenai, AK 99611  
(907) 283-8010

February 21, 1994

Dear Representative Bill Hudson, Chairman House Labor and  
Commerce Committee:

It has recently been brought to my attention HB 300 Civil  
Liability for Commercial Recreation Activities is in the  
committee you chair and furthermore I learn it will be going  
up for a hearing on February 24th. I wish to say I strongly  
support this bill because it clarifies my obligations to my  
clients and will probably reduce my liability insurance  
cost. Please help the Tourism Industry's small businesses  
by moving this bill through your committee.

Thank-you,



William D. Heath  
owner, Hike'n'Lunch Tours

Post-It™ brand fax transmittal memo 7871		# of pages 1
To: <i>AL RSC</i>	From: <i>John LIO</i>	
Subject: <i>Written testimony</i>	Co. for: <i>HR 300</i>	
Dept. <input checked="" type="checkbox"/>	Phone #	
Fax #	Fax #	



GLACIER BAY SEA KAYAKS

P.O. BOX 26  
GUSTAVUS, ALASKA 99826  
(907) 697-2257

15 February 1994

Representative Bill Hudson  
Alaska State Legislature  
State Capitol  
MS 3100  
Juneau, AK 99801-1182

Dear Representative Hudson:

I am writing on behalf of HB 300 Civil Liability for Commercial Recreation Activities, and to let you know that our company supports this bill.

It's my understanding that this bill will help establish the responsibilities of both the people who operate the commercial activity and those that participate in it. In so doing, it's the intent of this bill to reduce uncertainty regarding the legal responsibility for injuries that may result from participation in such activities.

The passage of this bill could dramatically reduce insurance premiums for recreation businesses in Alaska, where profit margins are often borderline anyway due to the seasonal nature of the recreation industry in this state. Further, this bill would help to mitigate the effects that out-of-state accidents have on our insurance premiums. It would clearly reduce the number and amounts of out-of-court settlements.

I urge you give this bill high priority and to schedule a hearing to move this bill out of committee and on to the House Judiciary.

Thank you for your swift attention on this matter.

Sincerely,

A handwritten signature in cursive script that reads "Kara Berg".

Kara Berg  
Glacier Bay Sea Kayaks, Inc.



GLACIER BAY SEA KAYAKS

P. O. Box 26  
GUSTAVUS, ALASKA 99826  
907 697-2257

15 February 1994

Representative Jerry Mackie  
Alaska State Legislature  
State Capitol  
MS 3100  
Juneau, AK 99801-1182

Dear Representative Mackie:

I am writing on behalf of HB 300 Civil Liability for Commercial Recreation Activities, and to let you know that our company supports this bill.

It's my understanding that this bill will help establish the responsibilities of both the people who operate the commercial activity and those that participate in it. In so doing, it's the intent of this bill to reduce uncertainty regarding the legal responsibility for injuries that may result from participation in such activities.

The passage of this bill could dramatically reduce insurance premiums for recreation businesses in Alaska, where profit margins are often borderline anyway due to the seasonal nature of the recreation industry in this state. Further, this bill would help to mitigate the effects that out-of-state accidents have on our insurance premiums. It would clearly reduce the number and amounts of out-of-court settlements.

I urge you give this bill high priority and to schedule a hearing to move this bill out of committee and on to the House Judiciary.

Thank you for your swift attention on this matter.

Sincerely,

Kara Berg  
Glacier Bay Sea Kayaks, Inc.

# *Afognak Wilderness Lodge*

SEAL BAY, ALASKA 99697

CATERING TO ADVENTUROUS VACATIONERS • PHOTOGRAPHERS • FISHERMEN • HUNTERS

Radio Phone Contact: (907) 486-6442  
FAX: (907) 486-2217

ROY & SHANNON RANDALL  
Owners & Operators

FAX: 465-6790

*February 21st, 1994.*

*Honorable Bill Hudson,  
Alaska State Legislature,  
State Capitol [MS 3100]  
Juneau, AK 99801-1182*

*Dear Representative Hudson,*

*We request that you schedule HB 300 for hearings and move it out of your committee. Alaska's multitude of small "Mom & Pop" businesses are already under tremendous financial burdens to maintain both quality and all legal permits, insurances, etc. and we would like our Alaskan legislators to be more on our side as Wisconsin & Colorado legislators have helped their constituents.*

*Many thanks, in advance, for your consideration.*

*Cordially,*



*Roy & Shannon Randall,  
Afognak Wilderness Lodge.*



## Clearwater Outdoor Services

Peter R. Buist - Registered Guide/Outfitter

P.O. Box 71561 - Fairbanks, Alaska 99707

(907) 457-7189

February 14, 1994

Representative Bill Hudson  
State Capitol  
Juneau, AK 99801-1182

RE: HB 300 - Civil Liability for Commercial Recreation  
Activities

Dear Representative Hudson:

It is my understanding that this bill is currently in your Labor and Commerce Committee. I would appreciate your consideration for an amendment to this bill to include the more traditional Alaskan "supervised commercial outdoor recreation activities," namely hunting, fishing and dogsledding.

I support the concept of the bill, but wish the eco-tourism folks would be a little more fair in their scope. Hunting guides have far more problems with insurance requirements, even though they seem to be killing fewer tourists than the rafters and kyakers!

Thank you.

Sincerely,

Pete Buist  
Registered Guide-Outfitter #477



February 15, 1994

Linda Giguere  
Legislative Aide

Dear Linda,

Per our phone conversation yesterday, I want to put a few thoughts in writing regarding HB 300.

This bill is important to me because I know that many people living in the villages want to start small-scale tourism businesses but are stopped, in part, by the high cost of insurance. Anything the legislature can do to relieve or remove this obstacle to rural tourism development would be greatly appreciated by many people.

I am currently working for the City Council of a small Interior Athabaskan village to develop their village as a tourism destination. Several residents there want to start small tourism operations. Insurance costs are inhibiting some of these potential businesspeople. They know the dangers of bush excursions and the terms of HB 300 would suit the kind of clients and activities they want to have.

I hope that you can hold a hearing on HB 300 during this session and move out of committee to a successful vote on the floor. Thank you for your time, attention, and energy on this crucial piece of legislation.

Sincerely,

David Cornberg, Ph.D.  
General Manager  
LOCAL WORKS, Inc.  
P.O. Box 82631  
Fairbanks, AK 99708

488-7328

February 15, 1994

Honorable Bill Hudson  
Chairman, Labor & Commerce Committee  
ALASKA STATE LEGISLATURE  
State Capitol  
Juneau, Alaska 99801-1182

Dear Bill:

We are pleased that your committee is taking comment on HB 300 and that this legislation may move forward.

The legislation would create a fair playing ground for both operators and clients. If adopted as law, HB 300 would alleviate the vast majority of nuisance suits while still allowing parties, injured due to an operators negligence, to recover damages. Attached is a form signed by our Mendenhall River Float clients. Although it states "All personal articles are taken at the participants own risk", we pay for thousands of dollars in cameras and camcorders dropped in the river each year. HB 300 would reduce the likelihood of our having to defend against such claims.

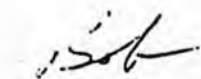
In 1982 a tree fell on one of our clients while on the Whiting River, south of Juneau. It took eight years and tens of thousands of dollars to defend against the subsequent claim for what is certainly an inherent risk of being in the Tongass National Forest. After passage of HB 300 such a claim would likely be dismissed, reducing a substantial burden on the court system and saving Alaska operators and their investors significant resources.

We recommend one change to HB 300. That the word "basic" be replaced by the word "reasonable" or "appropriate". There is a first aid certification of "Basic First Aid". In some cases (real back country trips) Basic First Aid would be insufficient, while in other circumstances (road side, i.e. sightseeing), it would be a burdensome requirement. CPR is the current industry standard for most pedestrian experiences.

We encourage the passage of this legislation and if you feel it appropriate, would be pleased to testify before your committee or later in Judiciary or Finance.

Thank you for your support Bill. It is much appreciated.

Sincerely,



Robert M. Dindinger  
President



## Reducing Risks

The safety and enjoyment of Alaska's outdoor activities depends on how risk management techniques are used to identify and reduce hazards. Both trip leaders and participants need to become "risk managers." Risk management starts with awareness of hazards and development of an operating method that incorporates safe personal and business practices.

Three primary causes of accidents are: 1) failure to provide or obtain adequate information and/or warning about the inherent hazards involved in the activity; 2) failure to provide or obtain proper or advance instructions about how to prevent or respond to hazards; and 3) failure to make the injured party and other participants feel truly "cared about."

Safety should be an integral part of planning for a trip. Prior to a trip discuss possible health and safety problems such as water, weather, insects, health problems, injury, and one's physical condition. Both back-country operators and clients should have current first aid and CPR skills, recent medical checkups, and carry their own first-aid/medicine kit.

Most operators expect guests to sign a Release of Liability form. Release forms do not take away the rights of guests to sue. They help clients to stop and think about the risks and their obligations to be careful and responsible participants.

Prior to departure, wilderness operators generally check participant's gear to make sure it will meet anticipated trip demands. They also provide a pre-trip orientation and safety briefing. Basic points covered include: 1) introduction of the staff; 2) introduction to the activity and any inherent dangers, 3) demonstration of equipment and check-out on ability to use it, 4) review of the medical situation, and 5) question and answer session.

By working together, operators and clients can assure a safe and outstanding Alaskan wilderness experience.

## Group Liability Insurance Available

The high cost and limited availability of insurance for back-country tour operators, hunters and lodges remains a major concern and limiting condition on the development of new businesses. AWRTA membership enables business members to obtain group outfitter & guides insurance through Cathcart, Ltd. For additional information on insurance, contact Julie at Cathcart Ltd. 907-258-6240.

### Liability Insurance Legislation

AWRTA requested Rep. Fran Ulmer to submit to the Legislative Drafting Committee a copy of Wisconsin's 1992 Liability Limits legislation. While not depriving client's of their right to sue, the legislation provides some relief to land owners and tour operators by establishing that participants must assume responsibility for their own actions. Current Alaskan rates are very high. AWSS, for example, expects to pay \$7.90/client hour in insurance premiums for guests to walk in the National Forest. Passage of the Wisconsin Bill resulted in a 20% decline in insurance rates.

As part of its campaign to push for passage of a similar bill, AWRTA is seeking funding for a lobbyist.

## Announcing the PAW Fund

The "Protect Alaska's Wildlife Fund" has been established for the Alaskan recreation and tourism industry to support wise management of Alaska's wildlife. The fund is managed by the Alaska Conservation Foundation, an Alaskan based organization, with tourism and wildlife professionals on the Board. No funds will be used to support tourism boycotts. Alaska Discovery has announced that it will contribute \$3 to the fund for each of its clients booked on their multi-day trips. AWRTA members to make contributions. For information or to make donations contact: Alaska Conservation Foundation, 430 W. 7th Ave. Suite 215, Anchorage, AK 99501. 907-276-1917.

## Consumer Evaluation of Ecotourism

At the 3rd World Congress on Adventure Travel and Ecotourism (Whistler, B.C.), The Ecotourism Society presented preliminary information on its green evaluation program for nature tourism services. Their survey of tour operators indicated a high level of agreement on how an ecotourism program should be defined and evaluated. Six points emerged: 1) operators should contribute directly to local environmental and social causes and offer their visitors an opportunity to contribute; 2) operators should provide clients with information on local environmental issues; 3) local accommodations (lodges, hotels, campsites, fixed campsites) should have a low impact on the local environment; 4) local residents should be employed as staff in the field and office; 5) training should be provided to the local people; and 6) group size should be limited.

Only 60% of the tour operators surveyed currently provided information on local environmental issues. The recommendation was that balanced presentations by local citizens with diverse viewpoints should be encouraged.

On local hiring of guides, it was felt that although visitors want tour guides indigenous to an area, often "local" guides are not local to the area visited. In addition, tour operators must balance their obligations to provide a safe, educational trip against hiring untrained local people.

Finally, there is a divergence of opinion on whether groups should be limited in size arbitrarily or whether group size should be based on the number of participants to leaders, the sense of crowding, and the effects on the environment, such as trail erosion, level of noise, disturbance of wildlife.

The Ecotourism Society expects to have its consumer evaluation forms ready for trial use in the spring of 1993. If you would like to comment on their program or participate, you can write: Megan Epler Wood, The Ecotourism Society, P.O. Box 755, N. Bennington, VT 05257.

RE: HB 300

2-14-94

Please help small, local recreational businesses by supporting this bill.

Two huge worries we have are:

- 1) The tremendous cost of commercial liability insurance
- 2) The constant worry about being sued

We are not organized in a high profile way because our energies are focused on operating our businesses. So please consider our needs.

Melinda J. Osque

**HVB**

**301**

**HFIN**

**FILE**

# HOUSE COMMITTEE REPORT

(11)

Date Referred: April 6, 1994

FURTHER REFERRALS:

Date of Committee Action: 4/8/94

The FINANCE Committee considered:

SSHB 301

SPONSOR SUBSTITUTE FOR HOUSE BILL NO. 301

BAN SALE OF SOME STUDDED TIRES AND STUDS

"An Act prohibiting the sale of certain studded tires or the sale of certain studs to be installed in tires; and providing for an effective date."

RECOMMENDATIONS: SS  
 be replaced with SSHB 301 (LTC)  the same title  
 a new title

have attached amendments(s)

do pass

do not pass

no recommendations

individual recommendations

additional referral to the \_\_\_\_\_ Committee

ADOPTS: \_\_\_\_\_ letter of Intent

ATTACHES NEW FISCAL NOTE(S): \_\_\_\_\_ (Dept)

APPROVES PREVIOUS: \_\_\_\_\_ (Dept/Date)

fiscal impact DOT

fiscal note(s) \_\_\_\_\_

zero fiscal note \_\_\_\_\_

zero fiscal note(s) \_\_\_\_\_

SIGNING <u>DO</u> PASS	DP	<u>OTHER</u> RECOMMENDATIONS	DNP	NR	AM
<i>E. P. Maclean</i> Maclean	✓				
<i>Ronald J. Larson</i> Larson	X	<i>Ray Parnell</i> Parnell		X	
<i>Mark Hanley</i> Hanley	X	<i>Ben Grossendorf</i> Grossendorf		X	
<i>Terry Martin</i> Martin	X	<i>Tom Hoff</i> Hoff			✓
<i>Paul Brown</i> Brown	✓	<i>Therriault</i> Therriault		X	
<i>Richard Foster</i> Foster	X				

*Ronald J. Larson* *E. P. Maclean*  
 CHAIRMAN'S SIGNATURE

**FISCAL NOTE**

Revision Date:  
Title: Ban Sale of Some Studded Tires and Studs

Department Affected: DOT&PF  
BRU:

Sponsor: Hanley  
Requestor:

Component:  
Component Serial Number:

**EXPENDITURES/REVENUES: (Thousands of Dollars)**

OPERATING	FY95	FY96	FY97	FY98	FY99	FY00
PERSONAL SERVICES	0	0	0	0	0	0
TRAVEL	0	0	0	0	0	0
CONTRACTUAL	0	0	0	<1,000.0>	<2,000.0>	<2,000.0>
SUPPLIES	0	0	0	0	0	0
EQUIPMENT	0	0	0	0	0	0
LAND & STRUCTURES	0	0	0	0	0	0
GRANTS, CLAIMS	0	0	0	0	0	0
MISCELLANEOUS	0	0	0	0	0	0
<b>TOTAL OPERATING:</b>	0	0	0	<1,000.0>	<2,000.0>	<2,000.0>

CAPITAL	0	0	0	0	0	0
---------	---	---	---	---	---	---

REVENUE FUND SOURCE	0	0	0	0	0	0
---------------------	---	---	---	---	---	---

**FUNDING: (Thousands of Dollars)**

1002 FEDERAL RECEIPTS	0	0	0	<900.0>	<1,800.0>	<1,800.0>
1003 GF MATCH	0	0	0	<100.0>	<200.0>	<200.0>
1004 GF	0	0	0	0	0	0
1005 GF/PROGRAM RECEIPTS	0	0	0	0	0	0
1006 GF/MHTIA	0	0	0	0	0	0
OTHER	0	0	0	0	0	0
<b>TOTAL FUNDING:</b>	0	0	0	<1,000.0>	<2,000.0>	<2,000.0>

**POSITIONS**

FULL-TIME	0	0	0	0	0	0
PART-TIME	0	0	0	0	0	0
TEMPORARY	0	0	0	0	0	0

Estimate of current year (FY94) impact: 0

**ANALYSIS: (Attach a separate page if necessary)**

DOT&PF estimates that stud wear of highway pavements creates annual pavement replacement or repair costs of approximately \$4,000,000. While not providing additional funding to DOT&PF, the bill will allow better use of existing Federal Aid Highway funds, by reducing rut repair costs by 50% annually once the bill is in effect.

Prepared by: Schuyler J. Stevens, P.E.

Phone: 465-6977

Division: Chief State Engineer

Date: April 8, 1994

Approved by Commissioner: 

Phone: 465-3901

B.A. Campbell

Agency: Department of Transportation and Public Facilities

Date: April 11, 1994

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Back-up



Department of Transportation  
and Public Facilities

# POSITION PAPER

BILL NO: HB 301

APPROVED:

*B. Marshall*  
*SL*

TITLE: Ban Sale of Some Studded  
Tires and Studs

DATE: March 22, 1994

This bill provides a restriction on the type of tire studs to be sold in Alaska. The requirements for maximum stud weight follow current research experience and legislation in Northern Europe, which found the stud weight to be a factor in preventing wear.

DOT&PF recommends that the bill be amended by adding an additional requirement for a stud hardness no greater than 64 Rockwell C that will further reduce the damage from studs on paving materials to a tolerable level.

The department is very concerned over the wear to pavements due to rutting. Some rutting is attributable to shoving under excess loading, however, most is due to studded tire wear. Research in Europe, Midwestern U.S., and Alaska has proven studs are the major cause of rutting.

*For Further Information contact J.K. Ginger Johnson at 465-3904.*



## HIGHWAY USERS FEDERATION OF ALASKA

P.O. BOX 20788

ANCHORAGE, ALASKA 99512-0288

October 24, 1991

The Honorable Dave Choquette  
House of Representatives  
P.O. Box V  
Juneau, Alaska 99811

Dear Representative Choquette:

After reviewing the cost and safety impacts of using studded tires, it appears the problem is more severe than previously thought.

A Department of Transportation and Public Facilities (DOT/PF) memorandum indicating tire pavement damage at \$12 per tire, per 30,000 miles, is seriously in error due to oversight of practical pavement repair methods. Previous figures reported by DOT/PF's Commissioner Turpin, in the \$133 to \$266 range per vehicle per 40,000 miles, appears more nearly correct.

Safety aspects of better winter traction from studs may be somewhat offset by warm season vehicle hydroplaning in water-filled, stud-worn grooves (I have personally experienced this). Also, inconvenience and cost of temporary pavement repairs (\$20,000 per lane mile), or resurfacing (\$60,000 per lane mile) is a factor.

Present studs have a MOH's scale hardness of perhaps 8± and literally grind softer asphalt aggregate, with a hardness of 6±, in an action similar to a grinding wheel on steel. The softer material is removed in direct proportion to the number of passes.

The development of harder studs from once used softer steel studs is apparently the problem. Mild steel has a MOH's hardness of 5± which more nearly matches pavement aggregate hardness. Steel studs are effective, but also tend to wear more and may not last the life of a tire.

Investigation into replacing studs shows that re-drilling and restudding a tire in Anchorage costs \$20 per tire and is effective.

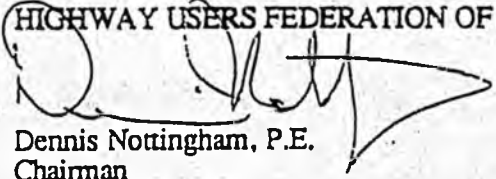
An average of \$200 pavement damage from two studded tires over the tire life does not compare favorably with a \$40 restud charge. For each 100,000 vehicles, an economic pavement loss of \$5 million per year from stud use seems probable.

It appears the only solution to the costly practice of using studs is to limit stud hardness, if elimination of stud use is not possible.

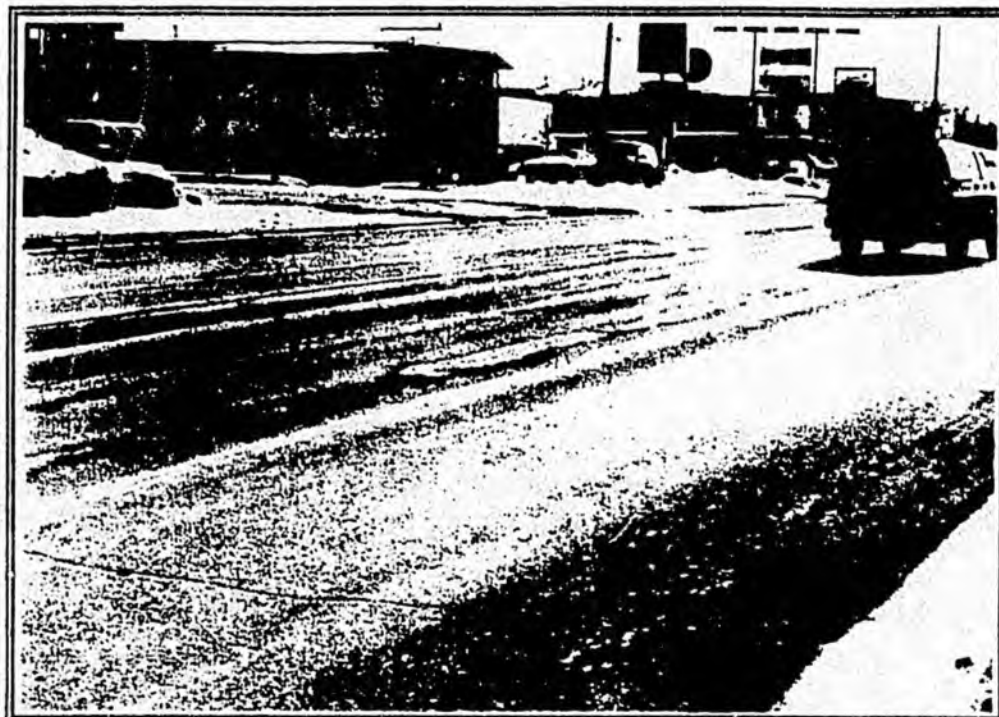
We hope this information will be of use to you.

Sincerely,

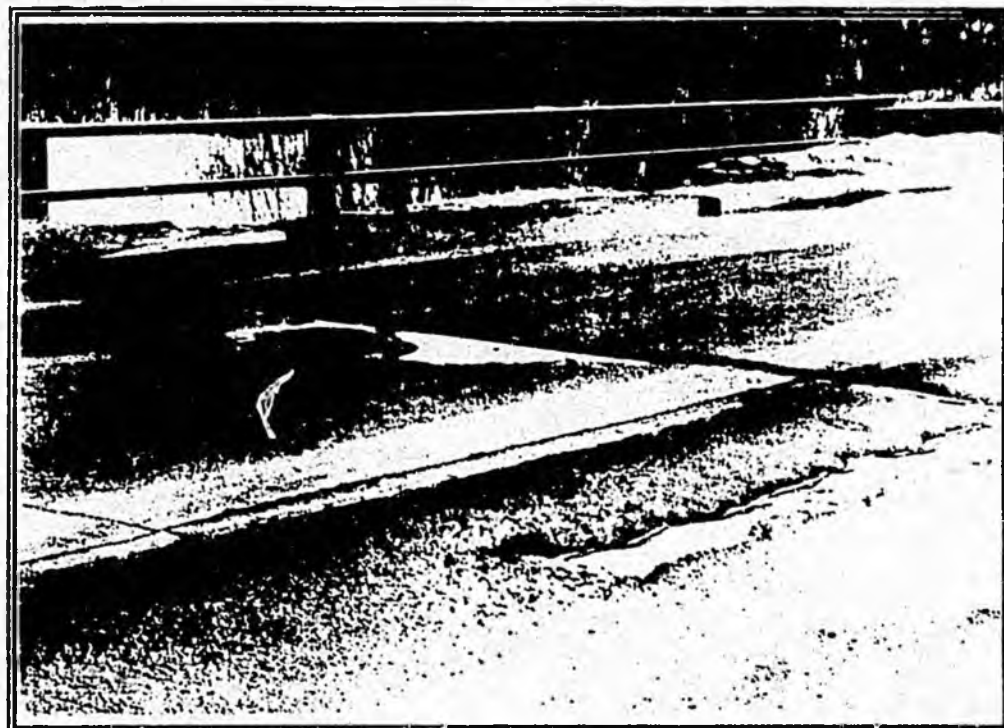
HIGHWAY USERS FEDERATION OF ALASKA

  
Dennis Nottingham, P.E.  
Chairman

DN/dj/89072



Studs have worn through the top pavement layer ( $2'' \pm$ ) along lines spaced equally with car wheels.



Pavement ( $2'' \pm$ ) on bridge has been stud worn to concrete.

DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES

3132 CHANNEL DRIVE  
JUNEAU, ALASKA 99801-7652  
PHONE: (907) 465-2951  
TEXT TELEPHONE: (907) 465-3652  
FAX: (907) 465-2460

ENGINEERING & OPERATIONS STANDARDS

August 3, 1993

Representative Mark Hanley  
716 West 4th Avenue  
Anchorage, Alaska 99501

Subject: Studded Tires  
& Stud Types

Attn: Kip Knutson

File: 2552

AUG 09 1993  
Dear Mr. Knutson:

I am responding to your call and our discussion on July 21st regarding the advisability of requiring a tire stud type with a hardness of 6.5 on the Moh hardness scale. You should be aware that the Moh scale is intended only for scratch hardnesses of crystals of minerals and not for metals. As such, it was constructed by determining what mineral would scratch other minerals. I understand that typical steels range from about 5.5 to 6.5. However, tire studs require a carbide center pin which is probably around 7 or 8 on the Moh scale. Studs of only steel would wear quickly and not work as ice gripping studs at all; I doubt that any such are even manufactured. The alternative I suggest for reducing pavement wear is the use of lightweight studs, as are now being required in Northern Europe. Mr. Bo Simonson of Sweden's Road and Traffic Research Institute advised that use of aluminum or plastic bodied studs will be expected to cut pavement wear rates in half. Samples of lightweight European type studs are enclosed, along with typical steel studs from a local tire shop. Legislation requiring such lightweight studs would require that the maximum stud weight be set at 1.3 grams for cars and at about 2.0 grams for large trucks (tire rim sizes of 17" or greater).

As we discussed, our pavement rut measurements from start to end of the winter seasons have shown a pavement wear rate of 0.1 to 0.2 inches per million studded tire passes. The direct value of the pavement worn away amounts to \$10 to \$15 per studded tire during it's useful life. However, repairing the ruts normally requires that we mill or remove and replace the pavement across the entire lane to the bottom of the ruts. This increases the pavement repair costs to about \$40 to \$50 per studded tire. These costs may substantially reduced by lightweight studs.

August 3, 1993

The best wear data we have from pavement rut measurements is from Juneau. It is summarized by my memo of 6/13/91 (copy enclosed). However, in the Anchorage area good data comes from our pavement study site on the Glenn Highway just north of Eagle River. At that location the maximum rut depth is now about 0.9" after 10 years of service. The wear rate has been about 0.10" per million studded tire passes and the pavement loss from wear has been 19 tons per lane per mile per million passes.

As a final comment, the few studded tire use counts we made this past winter indicated large increases in studded tire use over the 1990 levels, which is disturbing from a pavement life standpoint. Juneau studded tire usage levels in March were 35% higher than in 1990, while Anchorage usage was up by 55%.

I hope that these figures will be of help to you. Also, we are just initiating a study of the comparative wear resistance of our different paving mix types. Within the next few months we hope to have some additional information from the wear testing machine being developed under that study. If you need further information on our rutting research work, please call me at 465-6956.

Sincerely,



David Esch  
Research Applications Engineer

Enclosures

cc: R. D. Shumway, Chief Engineer  
Eric Johnson, Pavement Management Engineer, Stwd. Materials

# Washington lawmakers seek a \$25-per-tire fee on studs

By JOSEPH TURNER  
McClatchy News Service

TACOMA, Wash. — State lawmakers have tried to outlaw road-damaging studded tires for most of the past 20 years, and they came close a few years ago.

But on the day the ban came up for a vote in the state House, fate intervened. It snowed.

And as supporters of the ban drove down the freeway from Seattle to the state capital in Olympia — slipping and sliding along the way — they started changing their minds.

"The gods were trying to tell us something," said George Walk, who sponsored the bill as chairman of the House Transportation Committee in the late 1980s. "It was going to be a close vote anyway. So when it started snowing outside, we were ready to give up."

Walk let the bill die without a vote.

This year lawmakers are taking a different tack. Instead of trying to ban studded tires, they want to impose a tax of \$25 per tire.

Senate Transportation Committee members approved the special stud tax in Senate Bill 5151 last week; the full Senate is expected to vote on the bill this week.

"We might not have to raise the gas tax so much if we'd do something about studded tires," said Rep. Shirley Winsley, R-Fircrest, this year's bill sponsor. "If people are going to insist on using studded tires, they should be willing to pay a small fee."

Small fee?

"Oh, jeez," said Richard Nordness, director of the Washington State Tire Dealers Association. "People can't afford to put that much money into tires,

## NORTHWEST

"A good snow tire costs \$50 to \$60. Most dealers charge \$9 or \$10, plus labor, to put the studs on. With a \$25 tax ... you're talking pretty close to \$100.

"It's insane, really," he said. "Putting such a high tariff on them has the same effect as a ban."

That's the point, said Sen. Larry Vognild, chairman of the Senate Transportation Committee.

Highway officials estimate studded tires cause about \$25 million damage a year to the highway system. The studs gouge into asphalt and concrete roadways. Pavement supposed to last 14 years gets chewed up years earlier.

Historically, the studded tire debate has pitted Western Washington lawmakers against their Eastern Washington counterparts. It's a question of differing climates.

In the slushy snows west of the Cascades, a studded tire is no help. And on wet

or dry pavement, studs can radically reduce traction, said Ron Maulsby, public affairs manager for Good-year Tire and Rubber Co. in Akron, Ohio.

"The only time we recommend a studded tire is where you're in part of the country where ice is covering the road for days or for months at a time," Maulsby said. "Metal studded tires will provide 40 percent better traction on compact snow and ice."

Nordness disputes the amount of damage caused by studded tires, especially since they've been equipped with a softer metal stud.

"It has not been proven that studded tires do that much damage to the road," he said. "Those same kinds of ruts show up in Florida and other states where studs are outlawed."

Heavy trucks get some of the blame for rutted highways.

"If we have to go back to the old days of using chains, we're going to see a lot more damage," Nordness said.

## NOTICE



The first clinic of the Alaska Baseball Umpires Association is scheduled for Tuesday, March 16th at 7:00 p.m. at Ptarmigan Elementary School, 888 Edwards Street.

## TRAINING BEGINS FOR NEW UMPIRES.

For more information call Allen Smith,  
344-0933 or 243-7757.

# MEMORANDUM


## State of Alaska Department of Transportation & Public Facilities

TO: Jeffery C. Ottesen  
Director, E&O Standards  
Headquarters

DATE: June 13, 1991

FILE NO: 64217

TELEPHONE NO: 474-2471

FROM: David C. Esch, P.E.   
Senior Research Engineer  
Statewide Research

SUBJECT: Studded Tires

A copy of the attached letter from Commissioner Turpin to Legislator Curt Menard on the subjects of studded tires use and pavement wear has come to my attention, and some new data I have just processed may be of interest.

Studded tire use and roadway rutting in Alaska have been the subject of a research study now nearing completion. I have processed Juneau pavement wear data at the Juneau-Douglas bridge, the Douglas Island "Breeze-In" crosswalk, and the Mendenhall Loop pedestrian over-crossing. Pavement wear rates were calculated based on total studded tire passes estimated from stud usage counts and monthly and annual traffic counts. Results were very consistent between sites, as shown in Table I.

Total Stud Passes by 4/4/91 (Millions)	Location	Wear per Million Passes		
		Wear Rate (inches)	Wear Area (inches) <sup>2</sup>	Tons/Lane/Mi.
5.37	On J.D. Bridge	0.148	9.31	23.9
5.37	Before J.D. Bridge	0.134	9.92	25.5
3.87	Douglas Road	0.122	9.08	23.3
5.84	Mendenhall Loop	0.102	7.56	19.3

The 4th column, showing the worn area in square inches is the cross-sectional area worn away in both ruts of one lane at our measurement sites. These results show our wear rates to be much less than quoted in previous literature. These figures convert to pavement losses of 10 to 14 metric tons per kilometer, rather than the 50 to 100 tons quoted in the letter to Representative Menard. This, in turn, converts to a cost for replacement of the worn away pavement of about \$12.00 per studded tire if the tires are used for 30,000 miles. A suitable solution may be to tax studded tires at \$12.00 each at the point of sale.

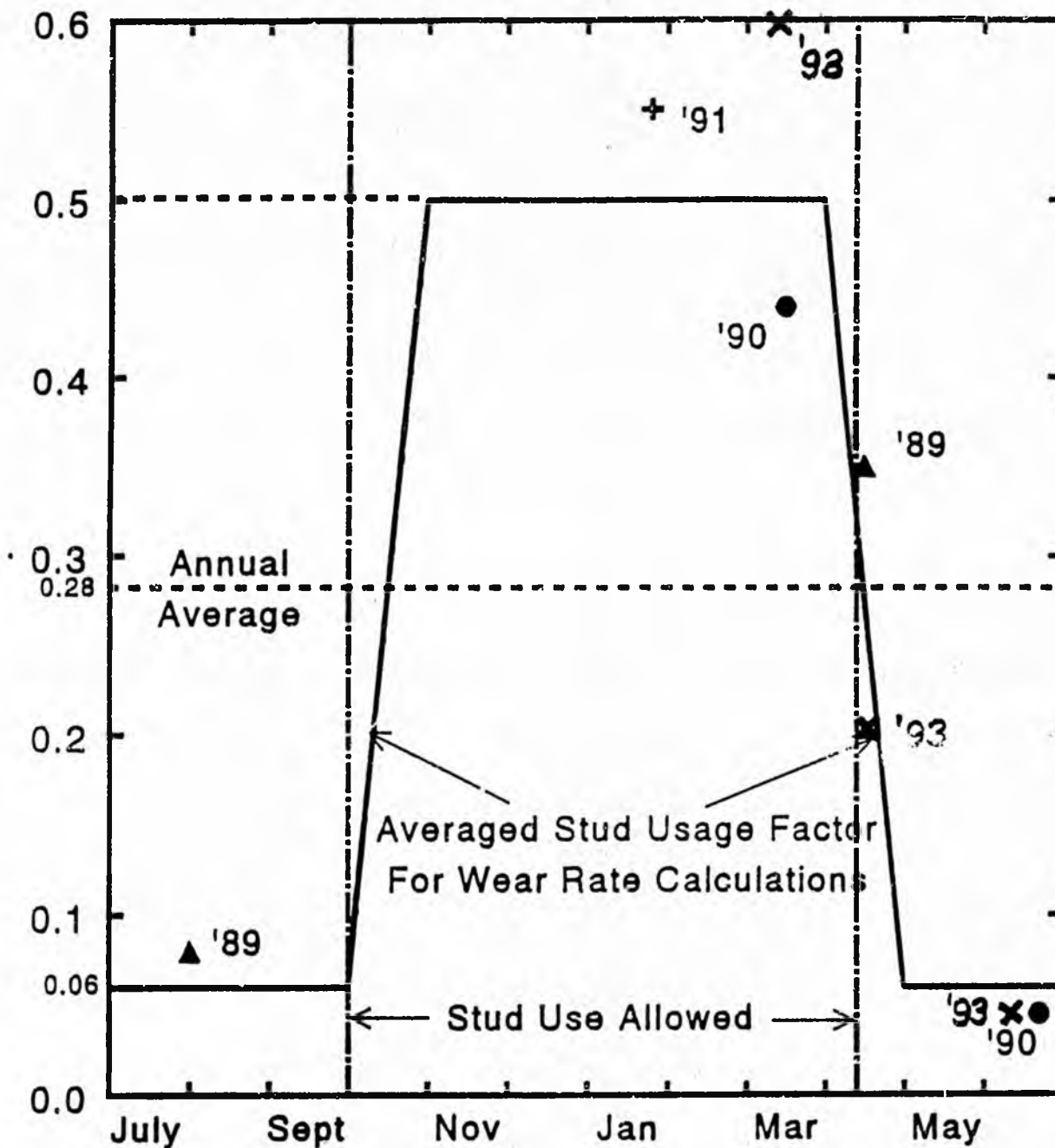
Our Juneau rut data has provided some very interesting conclusions. By measuring rut depths on and off of the Juneau-Douglas Bridge we found essentially the same rut depths developing over the bridge deck concrete as over a crushed gravel subgrade. The approaches and the bridge itself were paved with the same AC mix. This tells us that subgrade deformation is not a cause of the pavement rutting, and that our interpretation of the rutting as wear-related is correct.

Our measurements before and after the 1990-91 winter tell us that rut depths increase much more rapidly in winter than in summer, due to the much higher wintertime usage of studded tires and also to some spinning of the tires when roads are icy. Table II summarizes our measured wear rates over various time periods.

TABLE II: Juneau Area - Seasonal Rut & Wear Measurements				
Site	Period Covered	Dates Covered	Wear Rates inches/million Stud Tire Passes	
S. Douglas	8 Summers + 7 Winters	10/81 to 4/89	.112	
	2 Summers + 1 Winter	4/89 to 10/90	.099	
	1 Winter	11/90 to 4/91	.265	
Mendenhall Loop	7 Summers + 6 Winters	9/82 to 4/89	.105	
	2 Summers + 1 Winter	4/89 to 10/90	.094	
	1 Winter	11/90 to 4/91	.090	
J. Douglas Bridge	8 Summers + 7 Winters 2 Summers + 1 Winter 1 Winter	10/81 to 4/89	<u>On Bridge</u>	<u>Off Bridge</u>
		4/89 to 10/90	.145	.133
		11/90 to 4/91	.127	.150
			.202	.115
Juneau Average Values	8 Summers + 7 Winters	Up to 4/89	0.124	
	2 Summers + 1 Winter	4/89 to 10/90	0.118	
	1 Winter	11/90 to 4/91	0.168	

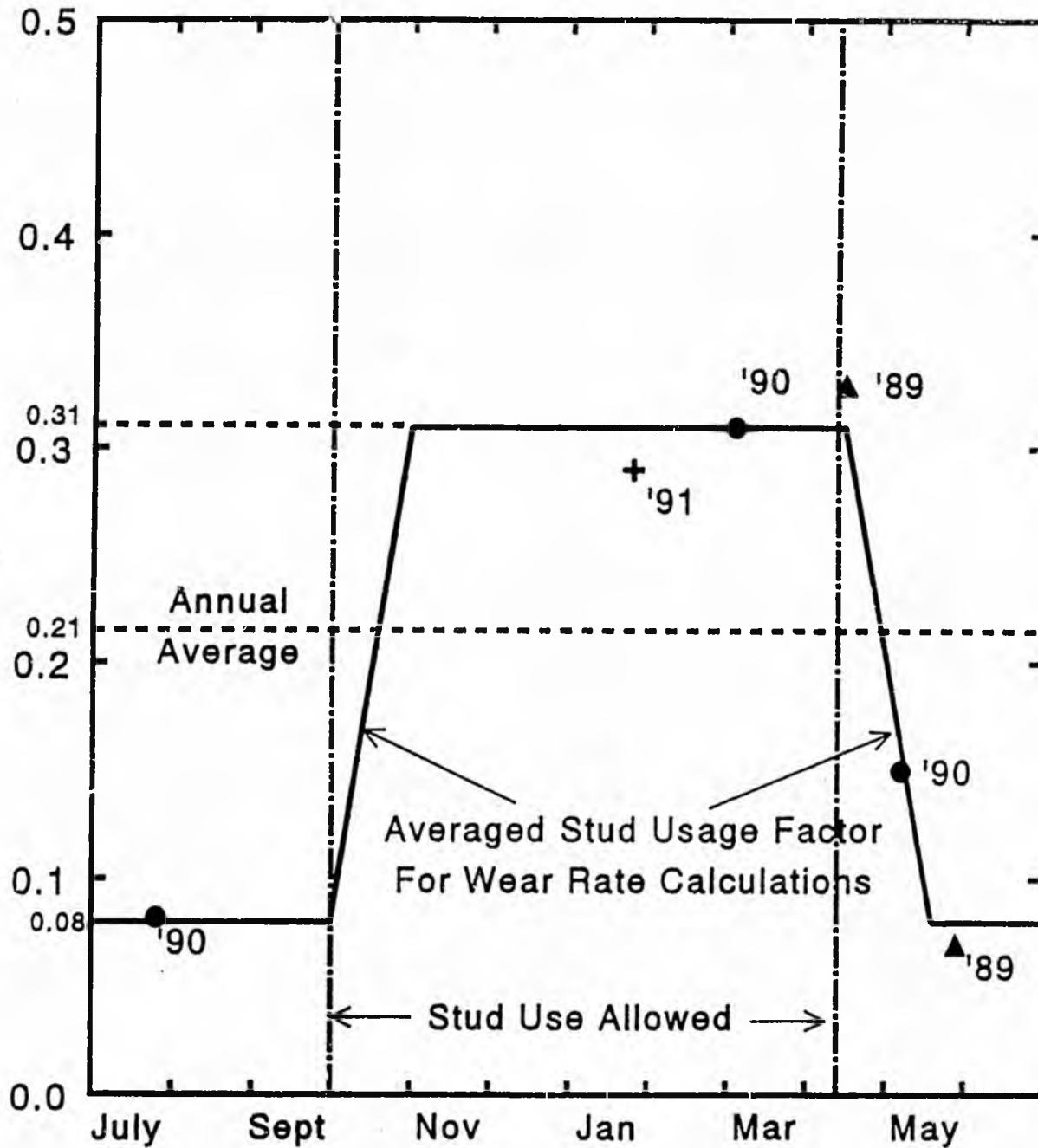
My overall conclusion is that essentially all of the pavement rutting in Juneau is due to studded tire wear, and that about 10% of the total rutting comes from stud use during the "No-studs-allowed" season of the year. The higher winter time wear rates for the first and third sections listed may be because they are in light acceleration or braking areas, while the Mendenhall Loop site has a more constant speed aspect.

Studded Tires per Vehicle Pass  
(one wheelpath)



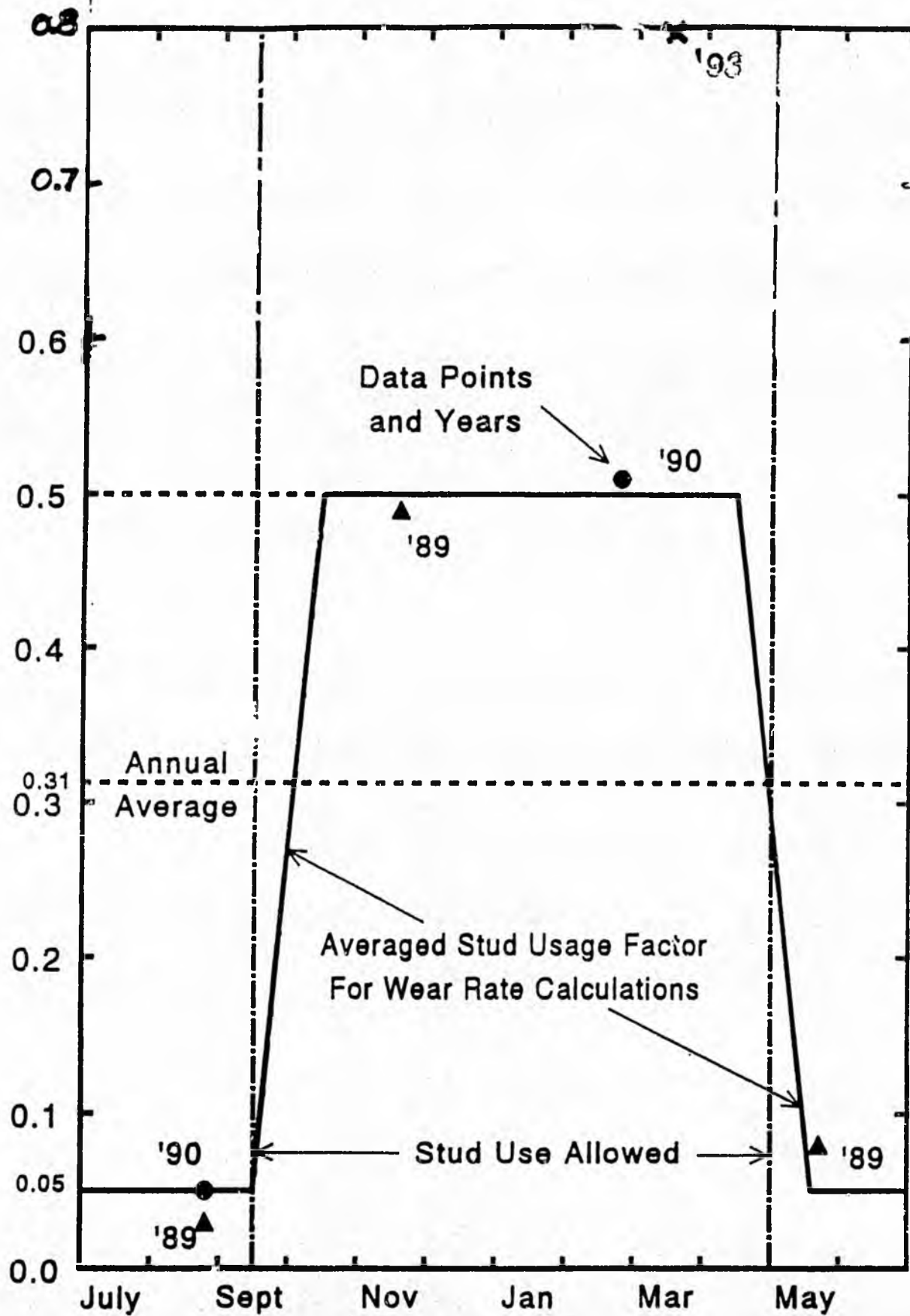
Seasonal Studded Tire Frequency Pattern  
Juneau, Alaska

Studded Tires per Vehicle Pass  
(one wheelpath)



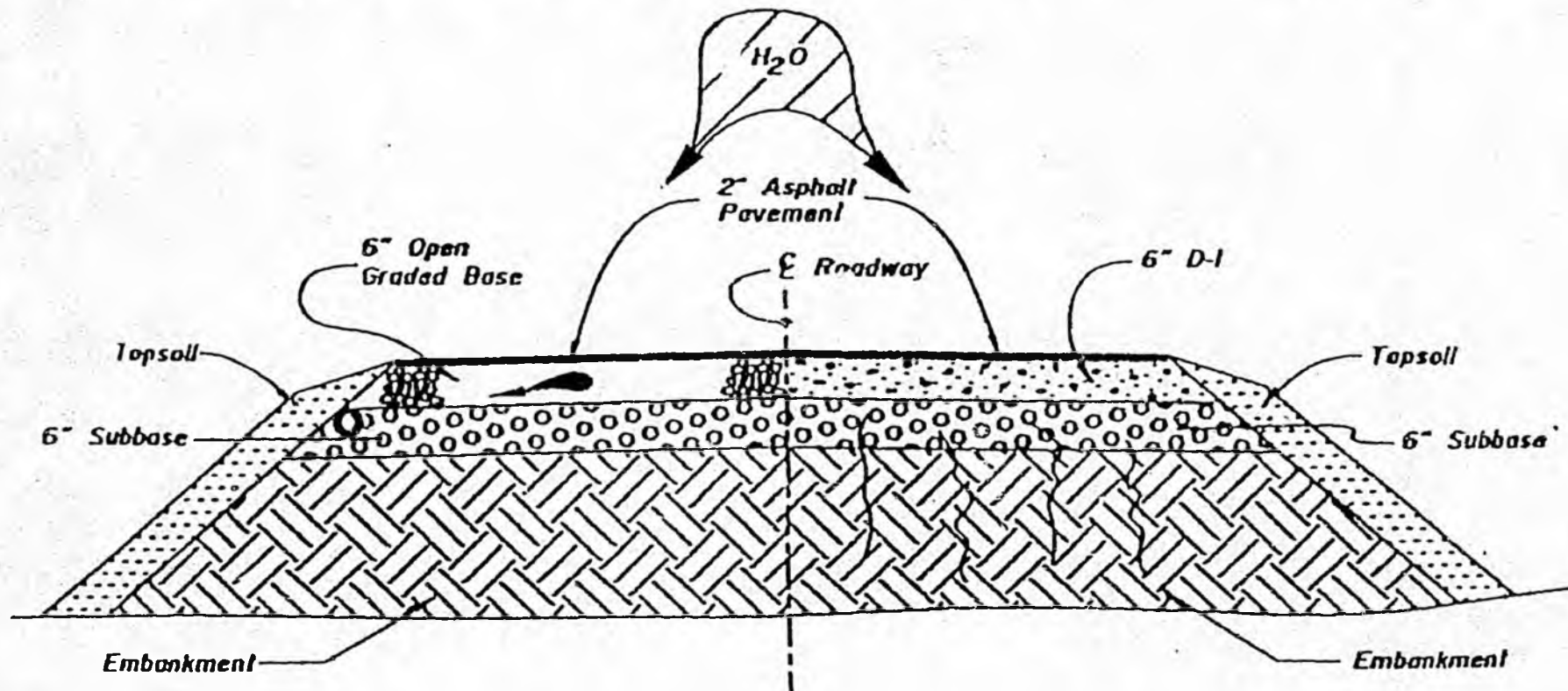
Seasonal Studded Tire Frequency Pattern  
Fairbanks, Alaska

Studded Tires per Vehicle Pass  
(one wheelpath)



Seasonal Studded Tire Frequency Pattern  
Anchorage, Alaska

# Alaska Department of Transportation & Public Facilities



## OPEN GRADED BASE

Sieve Designation	Percent Passing* by Weight
1"	100
3/4"	75-100
1/2"	60-70
3/8"	35-55
No. 4	0-5
No. 8	
No. 40	
No. 200	

\*2-3% Asphalt

## TYPICAL CROSS-SECTION

## D-1

Sieve Designation	Percent Passing by Weight
1"	100
3/4"	70-100
3/8"	50-80
No. 4	35-55
No. 8	20-50
No. 40	5-30
No. 200	0-5

## Studded Tire

### Estimate of the Pavement Damage of A Set of 4 Studded Tires

Weight of Lost Asphalt Concrete* (metric tons)	Distance traveled (kilometers)	US Tons lost per 1,000 Miles	Cost per Ton Asphalt Concrete (US tons)	Allied Costs**: Assume 50% of AC Cost	Cost per 1,000 Miles of Stud Tire Use	Cost for Life of Set of Studded Tires (4)***
50	1,000,000	0.09	\$35.00	\$17.50	\$4.66	\$186
100	1,000,000	0.18	\$35.00	\$17.50	\$9.31	\$373

\* From a paper presented at the XIVth World Road Congress, Prague, Czechoslovakia, 1971, based on research in Sweden.

\*\* Allied costs include engineering, mobilization and demobilization, and preparation.

\*\* A set of tires is assumed to have a 40,000 mile life.

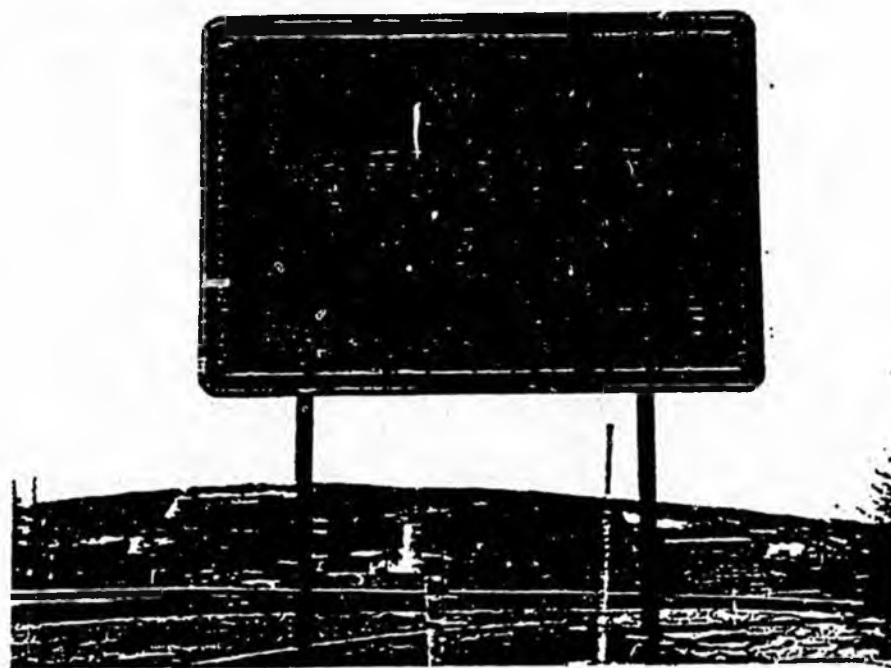
Prepared by Engineering and Operations Standards Division, Alaska DOT&PF, April, 1991

# WHEEL TRACK RUTTING DUE TO STUDDED TIRES

R.G. Hicks

Todd V. Scholz

David C. Esch



STATEWIDE **DOT** & PF RESEARCH

# Wheel Track Rutting Due to Studded Tires

by

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Professor of Civil Engineering

and

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December 1990

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15. Supplementary Notes					
16. Abstract  This is the second of a series of reports which deals with wheel track rutting in asphalt pavements. Specifically, this report is concerned with the extent of rutting due to studded tires. Significant findings include:  1) Very little research has been done since 1980 in this area, with the exception of work in the Scandinavian countries.  2) Many agencies continue to prohibit or restrict the use of studded tires.  3) Very little new information on percent of vehicles using studded tires or on tire wear studies was available.  4) Factors affecting wear rates were defined.  5) The consequences and benefits of using studded tires were identified.					
17. Key Words  Studded tires, flexible pavements, wheel track rutting			18. Distribution Statement  Unrestricted		
19. Security Classif. (of this report)  Unclassified		20. Security Classif. (of this page)  Unclassified		21. No. of Pages  64	22. Price

# TABLE OF CONTENTS

	<u>Page</u>
1.0 INTRODUCTION .....	1
1.1 Background .....	1
1.2 Objectives .....	1
1.3 Scope of Work .....	2
2.0 STUDDED TIRES PRACTICES .....	3
2.1 Use of Studded Tires .....	3
2.2 Percent of Vehicles With Studs .....	4
2.3 Characteristics of Studs .....	4
2.4 Permitted Use Periods .....	10
2.5 Enforcement .....	10
3.0 ROAD WEAR STUDIES .....	16
3.1 Causes of Pavement Wear .....	16
3.2 Factors Affecting Wear Rate .....	16
3.3 Pavement Wear Studies .....	23
4.0 IMPACTS OF STUDDED TIRE USE .....	26
4.1 Economic Impacts .....	26
4.2 Benefits of Studded Tires .....	26
5.0 SUMMARY .....	35
6.0 REFERENCES .....	36

## APPENDICES

- A Survey Form
- B Summary of Survey Responses
- C Controlled Protrusion Stud Information
- D Telephone Interviews with Tire Manufacturers

## LIST OF FIGURES

<u>Figure</u>		<u>Page</u>
2.1	G78x14 studded (R) and unstudded passenger tires . . . . .	7
2.2	Four basic stud types . . . . .	8
2.3	Typical dimensions for a controlled protrusion stud . . . . .	11
2.4	Spring-action stud (Fagersta Steels Limited) . . . . .	12
2.5	Legal restrictions on use of studded tires . . . . .	13
3.1	Relationship between acceleration and deceleration on portland cement concrete . . . . .	19
3.2	Relationship of studded tire induced wear vs. pavement type; Minnesota research . . . . .	21
3.3	Effect of stud type on wear for asphalt concrete pavements . . . . .	22
4.1	Stopping distance versus speed for cars traveling on asphalt pavement . . . . .	32
4.2	Stopping distance versus speed for cars traveling on concrete pavement . . . . .	32
4.3	Stopping distance versus ice temperature for four cars traveling at 20, 35, and 50 mph . . .	33
4.4	Changes in skid resistance of some pavements in Ontario with increasing use of studded tires . . . . .	34

## LIST OF TABLES

<u>Table</u>		<u>Page</u>
2.1	Historical data on the use of studded tires .....	5
2.2	Recent counts of studded tire usage in Alaska .....	6
2.3	Typical cross-sectional area specifications .....	8
2.4	Characteristics of studs .....	9
2.5	Restrictions on use of studded tires in the U.S./Canada .....	14
2.6	Restrictions on use of studded tires in Scandinavia .....	15
3.1	Cause of pavement wear under studded tires .....	17
3.2	Factors affecting pavement wear .....	18
3.3	Effect of factors on resistance of asphalt pavement to wear by studded tires .....	20
3.4	Summary of road wear studies .....	24
3.5	Factors affecting studded tire wear .....	25
4.1	Cost effects of studded tires on pavement wear and safety (for a ban on studded tires) ...	27
4.2	Estimate of additional costs due to the continued use of studded tires .....	28
4.3	Consequences of studded tire usage .....	29
4.4	Stopping distances from report for the Canadian Safety Council .....	31

## 1.0 INTRODUCTION

### 1.1 Background

The use of studded tires has long been recognized as improving traction in highways during the winter months when the roads are often icy. However, they also have been shown to increase road wear on both asphalt and portland cement concrete pavements. This report has been prepared to document the use and effects of studded tires, particularly in terms of producing wheel track ruts.

### 1.2 Objectives

Specific objectives of this report are to:

- 1) Quantify the use of studded tires in countries throughout the world. This includes data on

- Percent of vehicles using studded tires
- Characteristics of the studs (size and number)
- Time periods that studded tires are permitted

This information is summarized in Chapter 2.

- 2) Summarize the results of road wear studies (field and test track) in each of the following areas

- Mechanism of pavement wear
- Rate of pavement wear
- Factors affecting the wear rate

These results are presented in Chapter 3.

- 3) Identify the consequences/benefits of using studded tires such as

- Increased pavement maintenance to repair ruts, etc.
- Increased safety problems due to splash and spray

These results are presented in Chapter 4.

### 1.3 Scope of Work

In order to accomplish the stated objectives, two major work activities were undertaken. These included:

- 1) A computer literature search (TRIS). Many of these publications were reviewed and evaluated in the preparation of this report.
- 2) A survey of agency practices. A survey form (see Appendix A) was developed and mailed to 30 highway agencies, 11 Canadian provinces and territories, and 4 foreign countries (Norway, Sweden, Finland, and West Germany). The responses to the survey are given in Appendix B.
- 3) A telephone survey of selected tire manufacturers to identify the types and number of studs currently being used. These results are summarized in Appendix D.

## 2.0 STUDDED TIRES PRACTICES

The data presented in this chapter is the result of an extensive literature review, the survey of selected transportation agencies, and selected calls to studded tire manufacturers. Information was obtained from various agencies in the United States, Canada, and Europe.

### 2.1 Use of Studded Tires

The results of the survey were used to provide an indication of use of studded tires throughout the United States, Canada and abroad. The results indicate the following agencies permit their use:

United States	Canada	Europe
Alaska	New Brunswick	Sweden
California	Nova Scotia	Norway
Colorado	Québec	Finland
Connecticut	Saskatchewan	
Delaware		
Idaho		
Indiana		
Iowa		
Kansas		
Maine		
Montana		
Nebraska		
New Jersey		
Nevada		
New York		
North Dakota		
Oregon		
Pennsylvania		
Rhode Island		
South Dakota		
Utah		
Vermont		
Washington		
Wyoming		

It should also be noted that in all cases where studs are permitted, so are chains.

## 2.2 Percent of Vehicles With Studs

The results of the survey did not provide much useful recent information on use of studded tires. In fact, only a few agencies provided an estimate for current usage. Therefore, heavy reliance was placed on results from the literature (pre-1980) since the actual usage rates are virtually unknown in the USA and Canada.

Historical data on the percent usage by vehicle type (cars and trucks) of studded tires in the United States and abroad is given in Table 2.1. As noted, many states do not allow studded tire use, while usages as high as 60% or more have been reported by the states of Alaska, Montana, and Vermont (TRB, 1975).

Sweden reports that 60% of all vehicles use studs, while 90-95% of cars and 30-60% of trucks use studded tires in Finland (Huhtala, 1978). Provinces in Canada reported usage rates on cars as low as 20-25% and as high as over 50% (Smith & Schonfeld, 1971).

The percentages of use on two versus all four wheels are generally unknown except for Scandinavia and Alaska. In certain countries, the use is mandated on all four wheels if studs are used on any wheel. This is to increase safety as well as acceleration.

A recent survey of studded tire usage in Alaska is given in Table 2.2. As indicated, studded tire usage varies seasonally as well as between years and locations. However, it can be seen that wintertime usage (through March) by light vehicles is between 20 and 35% with roughly one-third of these vehicles being four-wheel drive.

## 2.3 Characteristics of Studded Tires

As indicated in Figure 2.1, a typical studded tire is essentially a normal winter or all-season tire with studs embedded in the tread. Typical specifications for passenger car studded tires are given in Table 2.3.

Although there were many types of studs found in the literature, all have similar components. These consist of a pin (typically tungsten carbide) surrounded by the stud housing or body (typically steel), which has a flange at its base to hold the stud in the tire tread. Figure 2.2 illustrates the four basic stud types that have been used in the past, while Table 2.4 summarizes the characteristics of each type. Conversations with tire manufacturer/distributor personnel revealed that only the Controlled Protrusion (Type I) stud is currently used in the U.S. The principal reason is that as the stud housing or body wears, coinciding with the tread

Table 2.1. Historical data on the use of studded tires.

Agency		% of Vehicles with Studs	Reference
Canada	Ontario	32	Smith, 1971
	Manitoba	20-25	Smith, 1970
	Quebec	50	Smith, 1970
	Maritime Provinces	50+	Smith, 1970
	Ottawa	48	Smith, 1971
United States	Alabama	1	NCHRP Syn. 32
	Alaska	61	
	Arizona	1	
	Arkansas	1	
	California	NA	
	Colorado	30	
	Connecticut	25	
	Delaware	18	
	Florida	NA	
	Georgia	NA	
	Idaho	27	
	Illinois	12	
	Indiana	10	
	Iowa	25	
	Kansas	7	
	Kentucky	12	
	Maine	NA	
	Maryland	NA	
	Massachusetts	32	
	Michigan	12	
	Missouri	14	
	Montana	60	
	Nebraska	38	
	Nevada	6	
	New Hampshire	30	
	New Jersey	20	
	New Mexico	NA	
	New York	30	
	North Carolina	2	
	North Dakota	32	
	Ohio	20	
	Oklahoma	1	
	Oregon	10	
	Pennsylvania	28	
	Rhode Island	NA	
	South Carolina	3	
South Dakota	40		
Tennessee	NA		
Texas	0		
Vermont	60		
Virginia	10		
Washington	35		
West Virginia	10		
Wisconsin	20		
Wyoming	35		
Finland	Cars:	90-95	Lampinen, 1988
	Trucks:	40	Huhtala, 1978
Sweden		60	Keyser, 1970

Table 2.2. Recent counts of studded tire usage in Alaska

Survey Date	Total Vehicles	Studded Tires (one side)	Studs per Vehicle Pass	% Vehicles w/Studs		% 4WD Vehicles
				On Some Tires	On All Tires	
a) Fairbanks						
4/18/89	250	81	0.324	28.0	12.4	24.8
5/22/89	319	23	0.072	6.6	0.63	24.0
3/2/90	583	182	0.312	20.4	10.8	34.1
5/7/90	820	121	0.148	11.0	4.10	33.2
7/16/90	1228	101	0.082	5.45	2.77	35.4
1/23/91	1385	402	0.290	19.3	9.75	43.4
b) Anchorage						
5/17/89	1766	143	0.081	6.4	1.7	—
8/21/89	1892	63	0.033	2.9	0.4	—
11/16/89	2361	1142	0.484	36.8	11.5	—
2/14/90	2076	1043	0.502	35.0	14.4	—
8/20/90	2339	112	0.048	3.8	0.9	24.3
c) Juneau						
4/12/89	993	348	0.350	24.8	9.3	32.5
8/1/89	352	28	0.080	6.2	1.7	30.0
3/15/90	1187	512	0.431	30.8	12.1	32.7
6/25/90	1119	40	0.036	2.9	0.45	35.3
1/25/91	650	345	0.531	40.6	15.9	40.6

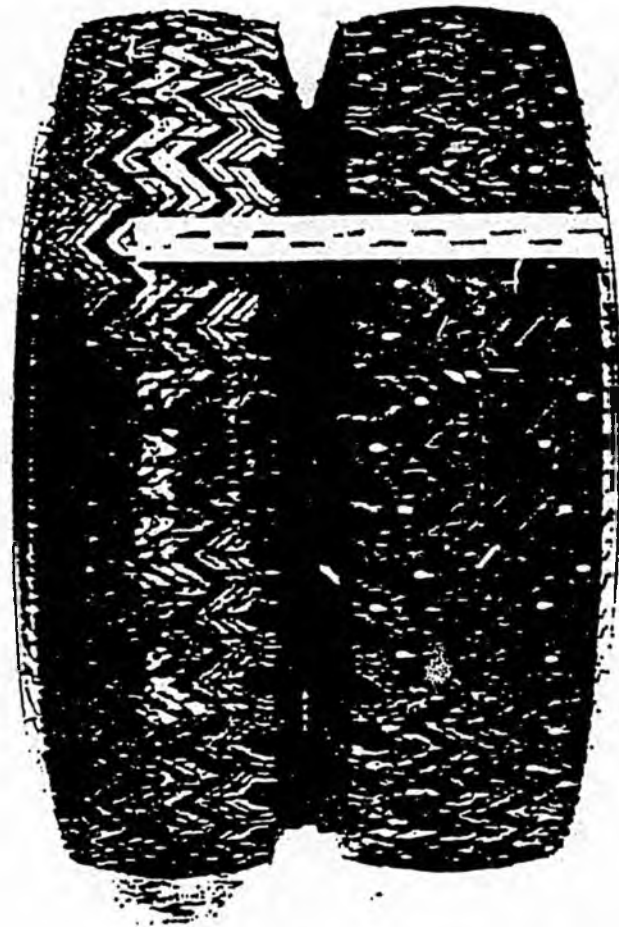


Figure 2.1. G78x14 studded (R) and unstudded passenger tires (Krukar & Cook, 1972).

Table 2.3. Typical cross-sectional area specifications (NCHRP Syn. 32).

Nominal Car Size	Tire Data		Tire Stud Data		
	Nominal Size	Typical Tread Surface Area (sq. in.)	Typical Maximum Number of Studs	Typical Cross-Sectional Area (sq. in.)	Percent of Tread Surface Area
Compact	B78x13	250	96	.0314	1.25
Intermediate	F78x14	270	96	.0314	1.10
Full Size	H78:15	312	96	.0314	1.00

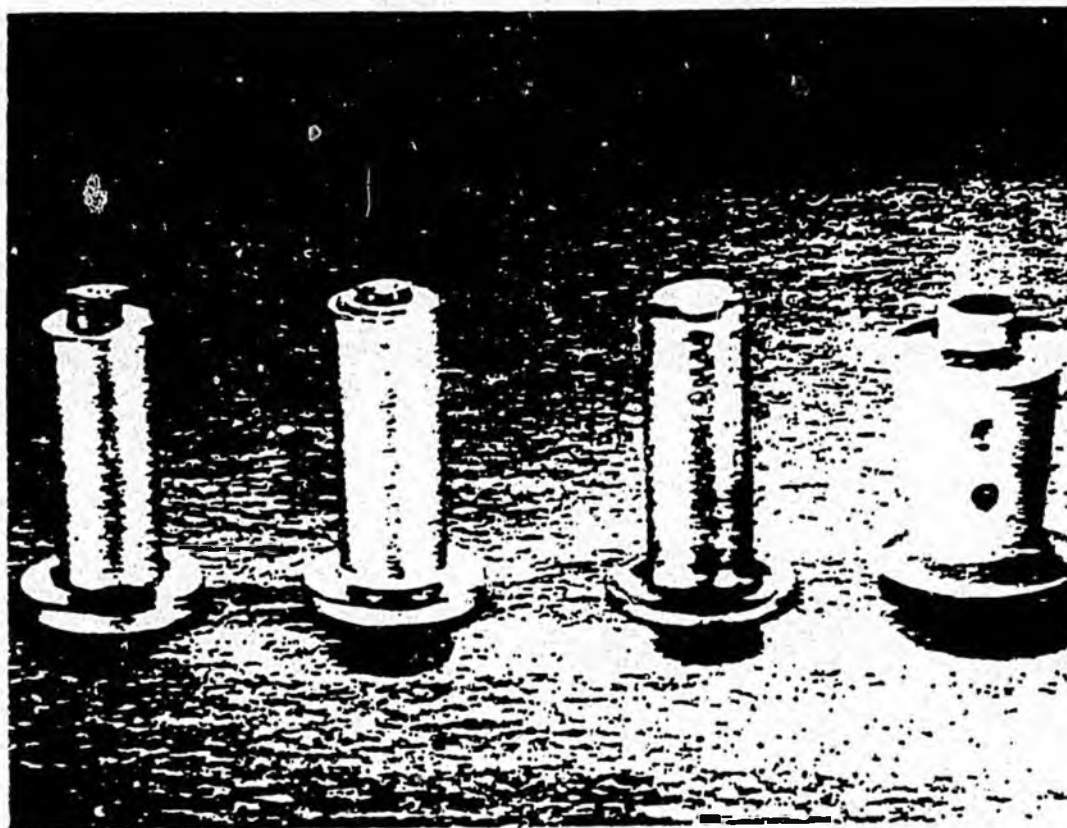


Figure 2.2 Four basic stud types. Left to right: Type III or CV Stud; Type I or CP Stud; Type II or PT Stud; and Type IV or FS Stud (Krukar & Cook, 1973).

Table 2.4. Characteristics of studs (Krukar & Cook, 1972).

Stud Type	Characteristics
Type I - "Controlled Protrusion Stud"	<ul style="list-style-type: none"> <li>● Carbide pin will move further into stud body if protrusion limit is exceeded</li> <li>● 18% lighter in weight than conventional stud</li> <li>● 5% smaller flange than conventional stud</li> </ul>
Type II - "Perma-T-Gripper Stud"	<ul style="list-style-type: none"> <li>● Pin found in other studs has been replaced with relatively small tungsten carbide chips in a soft bonding matrix enclosed in a steel jacket</li> <li>● Designed to wear within 10% of tire wear, thus maintaining a protrusion of approximately 0.020 in. or less</li> </ul>
Type III - "Conventional Stud"	<ul style="list-style-type: none"> <li>● Tungsten carbide pin</li> <li>● Stud protrusion will increase with tire wear</li> </ul>
Type IV - "Finnstop Stud"	<ul style="list-style-type: none"> <li>● Complete stud of light plastic casing with a tungsten carbide pin</li> <li>● Stud can be adjusted close to the tread rubber eliminating oscillation of the stud</li> <li>● Pin angle contact with road varies little with speed</li> <li>● Plastic housing tends to reduce effect of centrifugal force and heat build-up between rubber and stud</li> <li>● Air cushion can be left under stud to reduce stiffness (floating stud)</li> </ul>

wear, the tungsten carbide pin is pushed deeper into the stud housing providing a uniform protrusion length throughout the life of the stud. This benefit is not fully realized with the other stud types since the protrusion length of the stud can vary over time. Figure 2.3 gives the dimensions for the Controlled Protrusion Stud (see Appendix C for further details), while Figure 2.4 illustrates a fifth type of stud which was listed in the literature as being considered for manufacture. The number of studs/tire range from 64 to 120 (see Table D1).

In Sweden, it has been long recognized that the conventional studs cause excessive tire wear. They have therefore developed a new low-noise, reduced road wear ice-stud. It weighs only 0.7 gram, yet reportedly retains ice grip and durability. The reduction in weight is possible due to the use of a new polymer in the stud body (Simonsson, 1990).

## **2.4 Permitted Use Periods**

Based on the results of the literature review the periods of the year to which studded tire use is restricted in the United State and Canadian Provinces is shown in Figure 2.5 (TRB, 1975). Note that in the 1970's 14 states and two provinces had no restrictions and that nine states and one province prohibited the use of studded tires. The remaining states and provinces allow use of studded tires only during the fall, winter, and spring months. The results of the 1990 survey (Table 2.5) showed, for North America, that only three agencies had no restrictions, 25 states/provinces restrict stud use to a given time period, and eight agencies prohibit their use. For those agencies restricting the use of studs to a specific time period, most restrict their use to the period from October through April. Similar results for the European countries surveyed are given in Table 2.6.

## **2.5 Enforcement**

The results of the survey (see Appendix B, Question 7) also investigated the role of enforcement during prohibited periods. Generally, the risk of getting caught is considered low to moderate. Only South Dakota, Washington, Illinois, Minnesota, Nevada, Ontario, and Quebec indicated a high risk. The cost of being cited also varies considerably, with ranges in fines from <\$25 to \$500 plus vehicle impoundment.

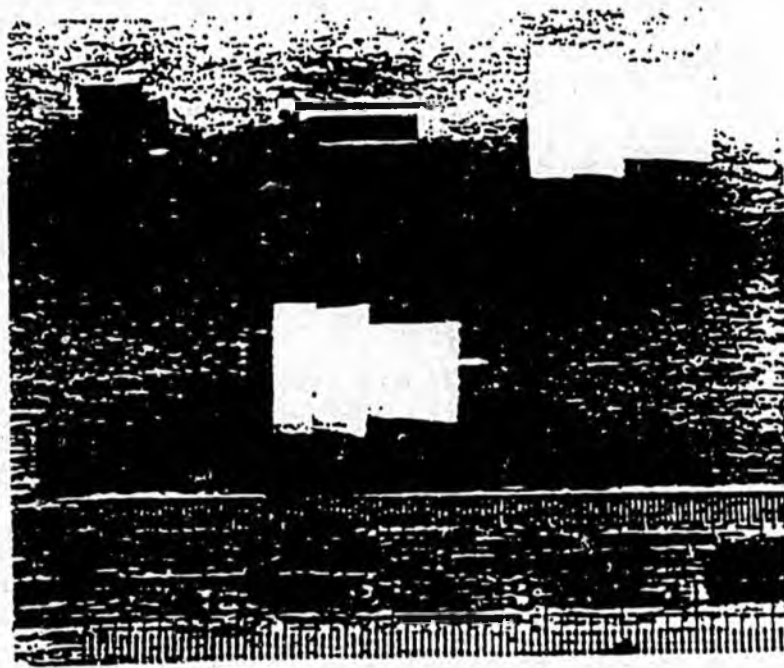
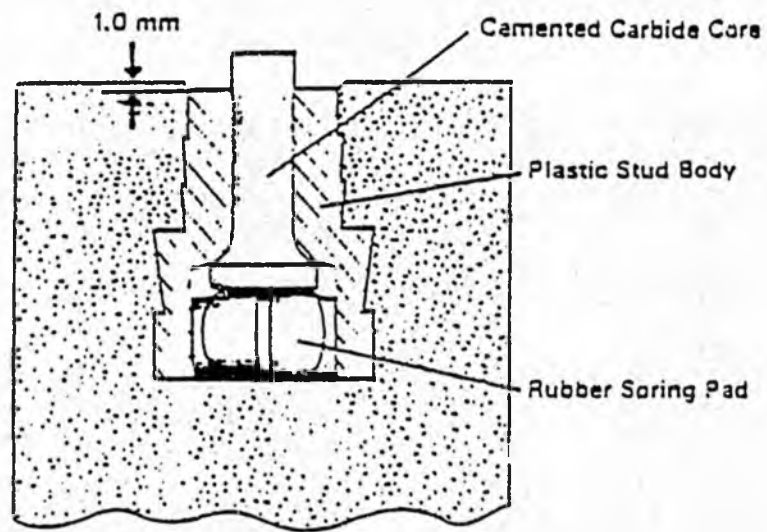
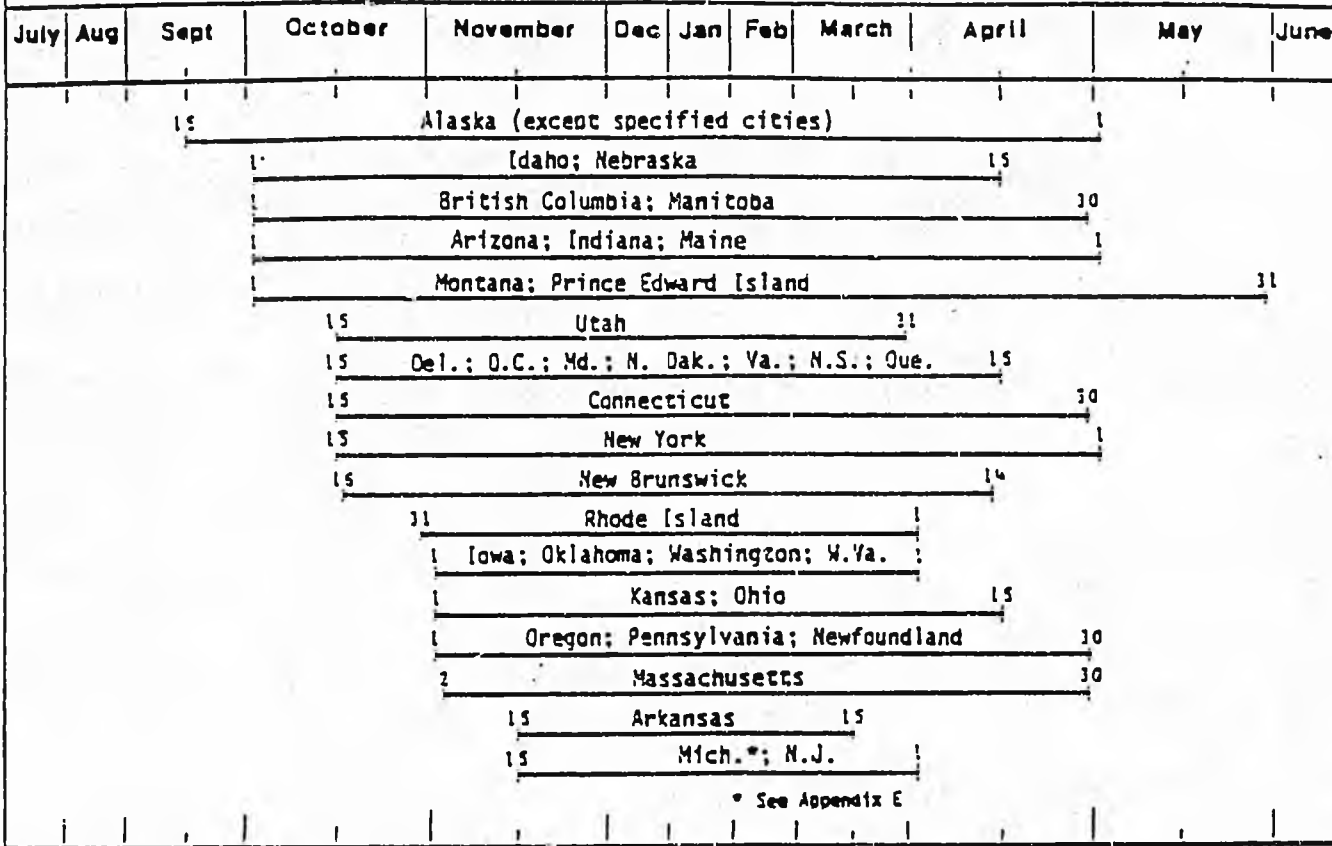


Figure 2.4. Spring-action stud (Fagersta Steels Limited) (NCHRP Syn. 32).

<b>a) No restrictions:</b>	Alabama	Missouri	North Carolina	Vermont
	Colorado	Nevada	South Carolina	Wyoming
	Georgia	New Hampshire	South Dakota	Alberta
	Kentucky	New Mexico	Tennessee	Saskatchewan

**b) Restricted to period shown:**



<b>c) Prohibited:</b>	California	Louisiana	Texas
	Florida	Minnesota**	Wisconsin**
	Hawaii	Mississippi	Ontario
	Illinois		

\*\* Limited use by out-of-state motorists permitted

Sources: American Automobile Association 12-1-74  
Federal Highway Administration June 1975

Figure 2.5. Legal restrictions on use of studded tires (NCHRP Syn. 32).

Table 2.5. Restrictions on use of studded tires in the U.S./Canada (August 1990).

a) No restrictions	Colorado Vermont Saskatchewan																				
b) Restricted to time period shown	<table> <tr> <td>Alaska</td> <td>Sept. 15 - April 30 (north of latitude 60°N) October 1 - April 14 (south of latitude 60°N)</td> </tr> <tr> <td>Connecticut</td> <td>November 15 - April 30</td> </tr> <tr> <td>Iowa</td> <td>November 1 - April 1</td> </tr> <tr> <td>Kansas</td> <td>November 1 - April 5</td> </tr> <tr> <td>Maine</td> <td>October 1 - May 1</td> </tr> <tr> <td>Nevada</td> <td>October 1 - April 30th</td> </tr> <tr> <td>New Jersey</td> <td>November 1 - April 1</td> </tr> <tr> <td>New York</td> <td>October 15 - May 1</td> </tr> <tr> <td>Rhode Island</td> <td>November 15 - April 1</td> </tr> <tr> <td>Utah</td> <td>October 15 - March 15</td> </tr> </table>	Alaska	Sept. 15 - April 30 (north of latitude 60°N) October 1 - April 14 (south of latitude 60°N)	Connecticut	November 15 - April 30	Iowa	November 1 - April 1	Kansas	November 1 - April 5	Maine	October 1 - May 1	Nevada	October 1 - April 30th	New Jersey	November 1 - April 1	New York	October 15 - May 1	Rhode Island	November 15 - April 1	Utah	October 15 - March 15
Alaska	Sept. 15 - April 30 (north of latitude 60°N) October 1 - April 14 (south of latitude 60°N)																				
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Nevada	October 1 - April 30th																				
New Jersey	November 1 - April 1																				
New York	October 15 - May 1																				
Rhode Island	November 15 - April 1																				
Utah	October 15 - March 15																				
c) Restricted (period unreported)	California Delaware Idaho Indiana Montana Nebraska North Dakota Oregon Pennsylvania South Dakota Washington Wyoming New Brunswick Nova Scotia Quebec																				
d) Prohibited	Arizona Illinois Maryland Michigan Minnesota Alberta Northwest Territories Ontario																				

Table 2.6. Restrictions on use of studded tires in Scandinavia (August 1990).

a) No restrictions	
b) Restricted	Sweden - 31 October to Easter Finland - 1 November to 31 March
c) Prohibited	Germany

## 3.0 ROAD WEAR STUDIES

This chapter summarizes, based on the literature, the results of studies from throughout the world to identify the cause (mechanism) of pavement wear owing to studded tires, the rate of pavement wear, and factors which affect the rate.

### 3.1 Cause of Pavement Wear

The results of the literature review indicated that the mechanism of wear is primarily by abrasive action. Nieme (1978) has summarized the mechanism best, as shown in Table 3.1. Which of the four possible cases is most important is still open to debate. In Alaska, it is generally felt that the primary mechanism of studded tire wear is by scraping off the mastic and abrasion of the aggregate.

### 3.2 Factors Affecting Wear Rate

Several factors have been identified as affecting the pavement wear rate. Keyser (1970) has prepared (in Table 3.2) an excellent summary of these factors. In addition, Keyser (1972) stated the most important factors to be wheel load, stud protrusion, temperature, and humidity.

Figure 3.1 shows the effect of pavement type on wear rate. The "regular" bituminous pavements consisted of fine-graded mixtures for thin overlays with 85-100 penetration asphalts while the "high type" bituminous pavements contained either rubber or asbestos admixtures and 85-100 asphalts. The "regular" pavements contained a filler while no filler was present in the "high type" pavements. For both tests (on a test track and typical highway pavements), the wear rate was considerably greater for asphalt concrete compared with portland cement concrete pavements. Aggregate type also had an effect for the portland cement concrete pavements. Other factors, as shown in Table 3.3, can also affect the wear rate. In addition, as shown in Figure 3.2, the wear rate in acceleration can be 2 1/2 times the wear rate in deceleration.

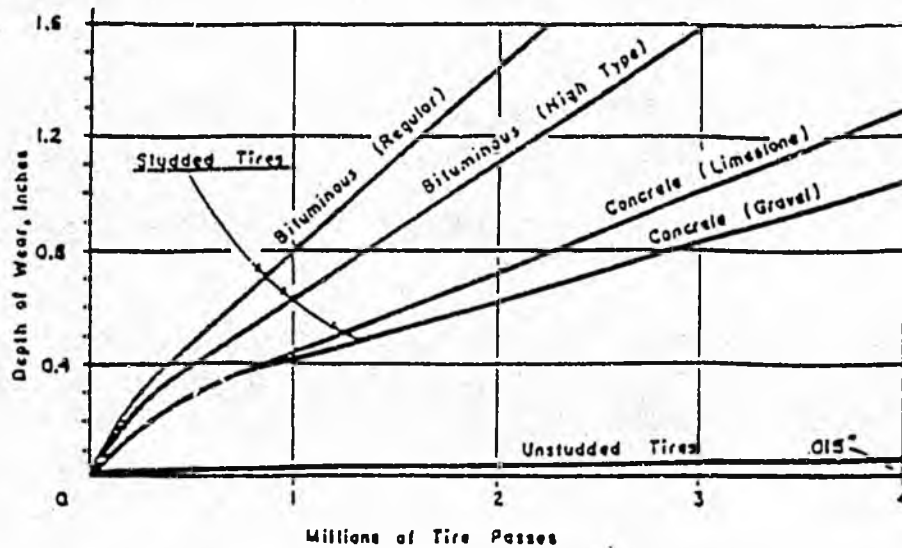
Figure 3.3 shows the effect of stud type on the average rate of wear on a test track under 542,000 wheel passes. In all cases, the wear rate was greatest during the initial 160,000 wheel passes. Wear rates then decreased to only 11 to 31% of the initial rates during the final 220,000 wheel passes. Type I and III studs caused much greater wear than type II studs.

Table 3.1. Cause of pavement wear under studded tires (after Niemi, 1978).

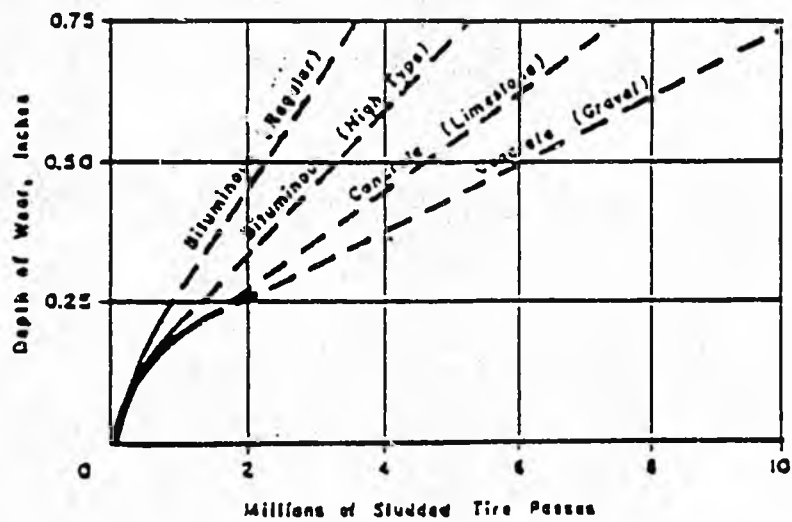
Cause	Description
1	The scraping action of the stud produces marks of wear on the mastic formed by the binder and the fine-grained aggregate.
2	The aggregate works loose from the pavement surface as a result of scraping by studs.
3	Scraping by the stud produces marks of wear on stones. Only in very soft aggregate does a rock fragment wear away completely by this action.
4	A stone is smashed by the impact of a stud and the pieces are loosened by the scraping action of the stud.

Table 3.2. Factors affecting pavement wear (Keyser, HRR 331, 1970).

Factor	Component	Characteristic
Vehicle, tire, and stud	Vehicle	Type and Weight Axle load Number of studded tires (front, rear)
	Tire	Type (snow or regular with or without stud receiving holes) Pneumatic pressure Age Configuration of studs Number of studs
	Stud	Type (material, shape) Protrusion length Orientation of studs with respect to tire wear
	Stud wear vs. tire wear	
Pavement	Geometry	Cornering (curve, sharp turn) Straight section Intersection Slope (up and down)
	Surfacing Material	Type and characteristics (bituminous mixtures, surface treatment, precoated chipping, portland cement, hardness) Age
	Surface Condition	Surface texture and profile Icy Compacted snow (compactness) Sanded or salted icy surface Slush
Environment	Humidity, temperature	Wet, dry, humid
Traffic	Volume	Number of passes and composition
	Speed	
	Wheel track	Width Distribution of wheel load
	Contact mode	Start (normal, abrupt) Stop (normal, abrupt) Acceleration (rate) Deceleration (rate) Spin Skid
Measure	Method and precision	



a) Wear rates of pavement specimens at test track



b) Wear rates of pavements of typical Minnesota highways

Figure 3.1. Relationship of studded tire induced wear vs. pavement type; Minnesota research (Kaysar, HRR 352, 1971).

Table 3.3. Effect of Factors on Resistance of Asphalt Pavement to Wear by Studded Tires (Keyser, HRR 352, 1971).

Factors	Influence on Wear	Wear Ratio
Penetration of bitumen <sup>a</sup> 60 vs 300	Significant	1:1.3
Bitumen content <sup>a</sup> 5 vs 7 percent (opt. at 7 percent)	Very significant	1:1.8
Type of aggregate <sup>b</sup> Lamprophyre vs limestone	Very significant	1:1.6
Mix type <sup>b</sup> Special mix vs sheet	Very significant	1:1.8
Voids in mix <sup>a</sup> 3 vs 7 percent	Significant	1:1.4
Uniformity <sup>a</sup> Asphalt concrete variation	Variation	X ± 42 percent
Vehicle Speed <sup>a</sup> 60 to 80 km/hr	Not significant	—
Vehicle Weight <sup>a</sup> Car vs truck	Very significant	1:1.9
Tire pressure <sup>a</sup>	Not significant	—
Temperature <sup>c</sup> 37 ± vs 50 F	Very significant	1:1.5

<sup>a</sup>Data taken from Norwegian studies

<sup>b</sup>Data taken from Keyser's work

<sup>c</sup>Data taken from Finnish studies

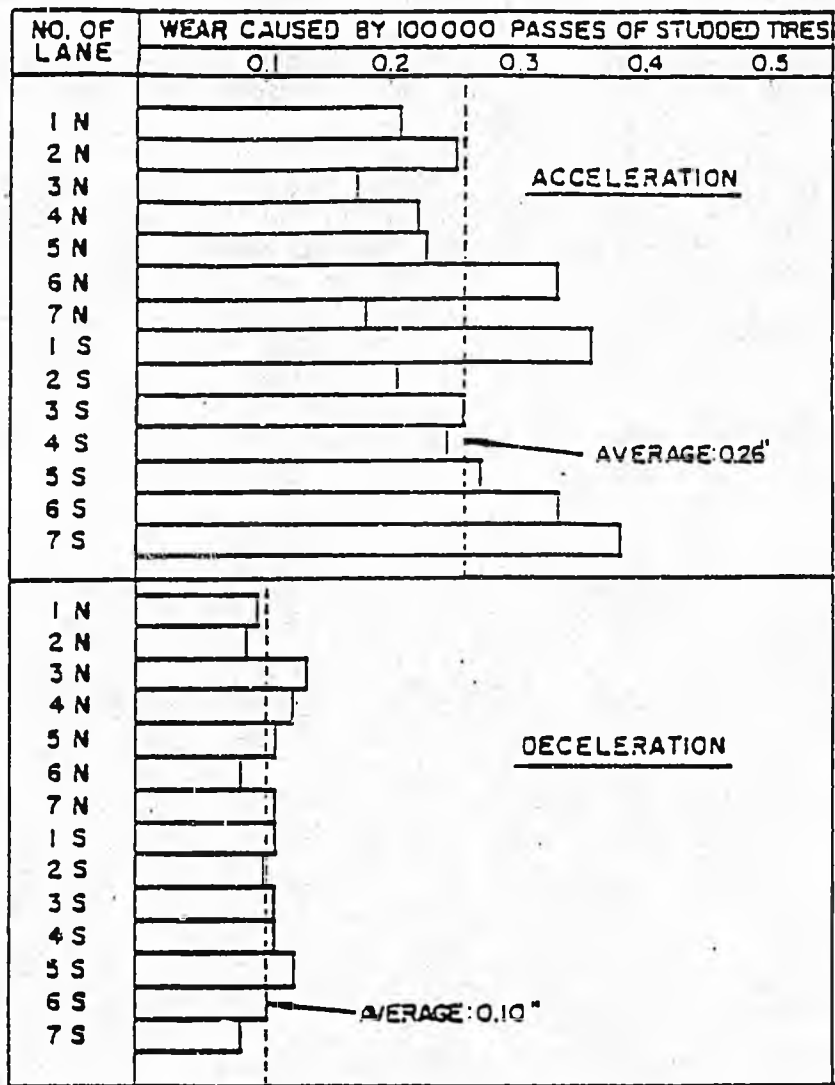
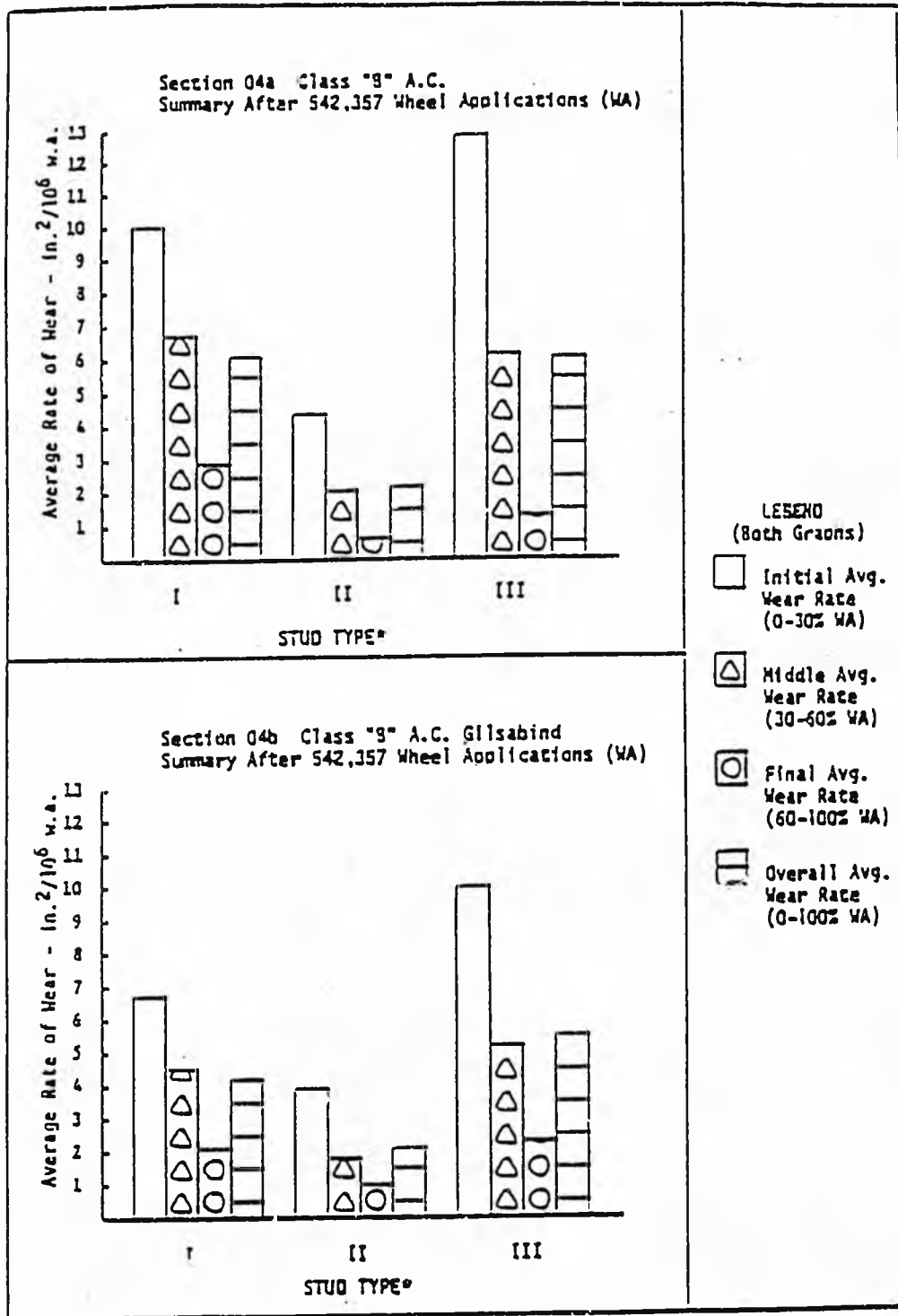


Figure 3.2. Relationship between acceleration and deceleration on portland cement concrete (Keyser, HRR 352, 1971).



\* Wear Rate Due to Unstudded Tires Insignificant or Inmeasurable.

Figure 3.3. Effect of Stud Type on Wear for Asphalt Concrete Pavements (Krukar and Cook, 1972).

Finally, temperature affects wear rates for asphalt concrete. The work by Krukar and Cook (1973) shows the lowest wear rate at or near 0°C. Increases in pavement wear as pavement temperatures go below 0°C are reportedly associated with increased tire hardness and pavement stiffness. As temperature decreases, pavement stiffness increases, as does the force required to push the stud into the tire so that it is flush with the pavement surface. Thus, at low temperatures, the combination of high stud force and increased pavement brittleness may result in increased wear rate. However, in Alaska it has been observed that wintertime frost and ice formation on roadways in colder cities such as Fairbanks can provide a protective surface coating and greatly reduce the low temperature wear rates.

The rate of wear reportedly increases when the pavement is wet (Keyser, 1970).

### 3.3 Pavement Wear Studies

The number of pavement wear studies is quite limited. However, both the literature review and survey did yield some basic information as shown in Table 3.4. In general, these results indicate:

- 1) Reported wear rates vary considerably between agencies. This likely is due to differences in percentages of vehicles with studded tires, and to materials differences.
- 2) Pavement type has a great effect on pavement wear. Asphalt surfaces wear at a faster rate than portland cement concrete.
- 3) In areas of acceleration and deceleration, pavement wear increases substantially.
- 4) Mixes with larger, more durable aggregates wear less.

In addition, other factors were shown to influence the wear rate. These are given in Table 3.5.