

Minnesota Attorney General: Administrative Rules Proceedings

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August 20, 2018

314

Attorney General

Fred Suhler
Special Assistant
Attorney General
Public Safety

June 7, 1977

Michael B. Miller
Special Assistant
Attorney General

296-4692

Minnesota Department of Public Safety Chapter 19 - Rules Prohibiting Alterations and Modification of Motor Vehicles

Fred,

Returned herewith are the above-captioned rules, along with the promulgating documents. I am returning them for lack of an affirmative presentation specifically supporting the rules at the public hearing, as well as for indefinite Findings of Fact. Because of these problems, I have not filed them with the Secretary of State.

It seems possible to me that if someone in the Department of Public Safety carefully reviewed the documents filed at hearing, Findings of Fact that adequately support these rules could be made. Please call me if you wish to discuss this possibility.

MBM/sr

Enclosures

Proposed Rules
2nd Hearing

MINNESOTA DEPARTMENT OF PUBLIC SAFETY

SAFETY ADMINISTRATION DIVISION

CHAPTER NINETEEN: PROHIBITED ALTERATIONS OR MODIFICATIONS TO CERTAIN VEHICLES

SafAd 166 PURPOSE AND SCOPE

(a) Purpose. These regulations establish which alterations or modifications to motor vehicles, passenger cars, and station wagons, of the road clearance, center of gravity, braking and steering systems, are prohibited.

(b) Scope. The scope of these regulations is intended to be consistent with Minnesota Statutes 1974, Section 169.47, Subdivision 2.

SafAd 167 DEFINITIONS:

For the purpose of these regulations, the following terms have the meanings ascribed to them:

(a) Alter. To replace an existing part or system of parts of a vehicle in a manner affecting road clearance, center of gravity, or the performance of the braking or steering system.

(b) Commissioner. The Commissioner of Public Safety of the State of Minnesota.

(c) Manufactured. The condition of the vehicle as initially designed, assembled, and sold new.

(d) Modify. To change, without replacement, an existing part or system of parts of a vehicle in a manner affecting road clearance, center of gravity, or the performance of the braking or steering system.

(e) Vehicle. A motor vehicle, passenger car, station wagon, motorscooter, motorcycle, as described by the provisions of Minnesota Statutes 1974, Section 169.47, Subdivision 2.

(f) Specially constructed vehicle. Every vehicle of a type for which a certificate of title is required and not originally constructed under a distinctive name, make, model, or type by a generally recognized manufacturer of vehicles and not materially altered from its original construction.

(g) Lash or free play. Lash and free play is apparent total arc displacement measured at the steering wheel rim prior to perceptible motion of a front wheel while being turned from straight ahead to left and straight ahead to right.

SafAd 168 EXCEPTIONS

These regulations do not apply,

(a) To alterations or modifications completed prior to the adoption of these regulations.

(b) To a specially constructed vehicle.

(c) To a motorcycle.

(d) To a vehicle altered or modified for use on railroad rails as well as on highways.

(e) To a truck necessarily altered or modified to facilitate the performance of a specialized service.

SafAd 169 ROAD CLEARANCE, CENTER OF GRAVITY

No vehicle shall be altered or modified so that when unloaded:

(a) Any part of the vehicle, other than the tires or mud flaps is closer to the ground than the lowest point of the wheel rim.

(b) The front or rear of the body has been raised more than two (2) inches from its distance to the ground as manufactured, within the limits required by Minnesota Statutes 1974, Section 169.73, Subdivision 2.

(c) Any permitted alteration or modification to the road clearance or center of gravity of a vehicle shall be accomplished so that:

(1) Brake hoses and fittings will accomodate maximum vehicle jounce and rebound.

(2) Structural parts are not bent or damaged, and stabilizer bars, shock absorber mountings, shackles, U-bolts and radius rods are securely attached.

(3) Spacers are not used to extend springs.

SafAd 170 BRAKING SYSTEM

(a) No modification or alteration of the brakes or braking system of a vehicle is permitted unless the performance of the braking system following modification or alteration meets or exceeds brake performance requirements of Minnesota Statutes 1974, Section 169.67.

(b) Brake system parts used shall not be deformed, cracked, broken, misaligned, binding or show severe wear.

(c) Vacuum hoses used in brake power units shall not be collasped, abraded, broken, improperly mounted or audibly leaking.

(d) Replacement brake lining must not have a normal friction coefficient below that of Class Code E (not over 0.35) or a hot coefficient below that of Class Code D (not over 0.25)

as identified in the Vehicle Equipment Safety Commission Regulation V-3.

SafAd 171 STEERING SYSTEM

The steering system of a vehicle shall not be altered or modified so that:

(a) The diameter of the steering wheel is less than twelve (12) inches.

(b) Lash or free play in the steering system exceeds values shown in Table 1.

(c) There is free play in the steering linkage, measured at a front tire tread, greater than one-quarter of an inch.

(d) There is restriction of free travel of a front wheel in either direction from that as manufactured.

Table 1. - Steering System Free Play Values

Steering Wheel Diameter (In.)	Lash (In.)
12-16	2
18	2-1/4
20	2-1/2
22	2-3/4

SafAd 172 - 180 Reserved for future use.

EXHIBIT A

STATE OF MINNESOTA

COUNTY OF RAMSEY

BEFORE EDWARD G. NOVAK

COMMISSIONER OF PUBLIC SAFETY

In the matter of the Proposed Adoption of Rules of the State Department of Public Safety Governing Prohibited Alterations or Modifications to Certain Vehicles.

ORDER FOR HEARING

To effectively implement Minnesota Statutes 1974, Section 169.47, Subd. 2, the Minnesota Commissioner of Public Safety deems it necessary to consider adoption of the proposed rules captioned above pursuant to the authority vested in me by M.S. 1974, Section 299A.01, Subdivision 6.

NOW, THEREFORE, IT IS ORDERED this 13th day of November, 1975, that a public hearing on the proposed rules captioned above be held in Room 81, State Office Building, St. Paul, Minnesota, December 23, 1975, commencing at 1:00 p.m., and continuing until all representatives of associations or other interested groups or persons have had an opportunity to be heard.

IT IS FURTHER ORDERED, that notice of said hearing be given to all representatives of associations or other interested groups or persons who have registered their names with the Secretary of State for that purpose and all persons who are presently members of the Minnesota Legislature.

STATE OF MINNESOTA
DEPARTMENT OF PUBLIC SAFETY

Edward G. Novak
COMMISSIONER OF PUBLIC SAFETY

Exhibit B

STATE OF MINNESOTA

BEFORE EDWARD G. NOVAK

COUNTY OF RAMSEY

COMMISSIONER OF PUBLIC SAFETY

In the matter of the Proposed Adoption of Rules of the State Department of Public Safety Relating to Prohibited Alterations or Modifications to Certain Vehicles

STATEMENT OF NEED

The above captioned rules are not amendments to existing rules of the Minnesota Department of Public Safety.

The need to adopt these rules arises because modification and/or alteration of certain vehicle components can adversely affect vehicle handling characteristics or otherwise create a condition compromising public safety.

The proposed rules are designed to prohibit vehicle modifications and/or alterations reasonably likely to affect the safety of operation of a vehicle with respect to road clearance, center of gravity, braking and steering in light of commonly accepted motor vehicle engineering principles.

STATE OF MINNESOTA
DEPARTMENT OF PUBLIC SAFETY

Edward G. Novak
COMMISSIONER OF PUBLIC SAFETY

11-20-75
DATE

Exhibit C

STATE OF MINNESOTA

BEFORE EDWARD G. NOVAK

COUNTY OF RAMSEY

COMMISSIONER OF PUBLIC SAFETY

In the matter of the proposed Adoption of Rules of the State Department of Public Safety Governing Prohibited Alternations or Modifications to Certain Vehicles.

NOTICE OF HEARING

Notice is hereby given that a public hearing will be held pursuant to M.S. 1974, Section 15.0412, Subdivision 4, in the above-entitled matter in Room 81, State Office Building, Capitol Complex, St. Paul, Minnesota, December 23, 1975, commencing at 1:00 P.M., and continuing until all representatives of associations or other interested groups or persons have had an opportunity to be heard concerning adoption of the proposed rules captioned above by submitting either oral or written data, statements or arguments. Statements or briefs may be submitted without appearing at the hearing.

A copy of the proposed rules is attached hereto.

Additional copies of the proposed rules are available and may be obtained by writing to Diane Hamilton, Department of Public Safety, 210A Highway Building, St. Paul, Minnesota 55155.

STATE OF MINNESOTA
DEPARTMENT OF PUBLIC SAFETY

Edward G. Novak
COMMISSIONER OF PUBLIC SAFETY

11-14-75
DATE

Exhibit D

STATE OF MINNESOTA

COUNTY OF RAMSEY

In the matter of the Proposed Adoption of Rules of the State Department of Public Safety Governing Prohibited Alterations or Modifications to Certain Vehicles.

CERTIFICATE

I hereby certify that the enclosed 440 general labels and Public Safety list constitute the complete list of persons, associations, and other interested groups who as of 9:15 o'clock A .M., this 19th day of November, 1975, have requested pursuant to M.S. 1974, Section 15.0412, Subdivision 4, that their names be placed on file with the Secretary of State for the purpose of receiving notice of public hearing on proposed rules on the subject captioned above.

Secretary of State

Joan Anderson Growe

Joan Anderson Growe

By Ceil Dunn

Exhibit E

STATE OF MINNESOTA

COUNTY OF RAMSEY

In the matter of the Proposed Adoption of Rules of the State Department of Public Safety Governing Prohibited Alterations or Modifications to Certain Vehicles.

AFFIDAVIT OF MAILING

Diane Hamilton, being first duly sworn, deposes and says:

That on the 19th day of November, 1975, at the City of St. Paul, County of Ramsey, State of Minnesota, she served the attached Notice of Hearing by depositing in the United States mail at said City of St. Paul, a true and correct copy thereof, properly enveloped, with postage prepaid, to all persons and associations at the addresses listed on the attached Certificate of the Secretary of State as well as to all persons presently being members of the Minnesota Legislature.

Diane Hamilton

Subscribed and sworn to before me

this 20th day of November, 1975.

Cheryl E. Waller

CHERYL E. WALLER
NOTARY PUBLIC - MINNESOTA
HENNEPIN COUNTY
My Comm. Expires Jan. 21, 1980

Exhibit F

STATE OF MINNESOTA

COUNTY OF RAMSEY

BEFORE Edward G. Novak

COMMISSIONER OF PUBLIC SAFETY

In the matter of the Proposed Adoption of Rules of the State Department of Public Safety governing Prohibited Alterations or Modifications to Certain Vehicles.

APPOINTMENT OF HEARING OFFICER

James Crawford, Chief of the Highway Patrol Division of the Department of Public Safety, is hereby appointed hearing officer for the public hearing to be held in the above-entitled matter, in Room 81 State Office Building, St. Paul, Minnesota, December 23, 1975, commencing at 1:00 p.m.

He is authorized and empowered to hear the case, to perform any and all acts incidental thereto, and to recommend findings of fact and final decision.

STATE OF MINNESOTA
DEPARTMENT OF PUBLIC SAFETY

Edward G. Novak
COMMISSIONER OF PUBLIC SAFETY

12/11/75
DATE

WELLINGTON R R SKELLY OIL
PO BOX 1650
TULSA OK
75102

WESTIN CHAS W
220 MEDICAL ARTS BLDG
DULUTH MN
55802

WHITING RALPH
555 WABASHA SUITE 204
ST PAUL MN
55102

WHITLOCK A G
ECON LAB OSBORN BLDG
ST PAUL MN
55102

WILCOX J PATRICK
1220 NORTHERN FED BLDG
ST PAUL MN
55102

WM.MITCHEL COLLEGE LAW LIB.
2100 SUMMIT AVE.
ST.PAUL MN
55105

WILEY ENTERPRISES
101 5TH AVE SE
OSSEO MN
55369

WILSON R GARY PPG INDUST
1 GATEWAY CENTER
PITTSBURGH PA
15222

WIS FEEDER PIG MARKET CO-OP

FRANCIS CREEK WI

WOLKERSTORFER THEODORE
676 17TH AVE NW
NEW BRIGHTON MN
55112

WOZNIAK D D
401 FIRST FED BLDG
ST PAUL MN
55101

WYANT CLINTON W ATTY

ATKIN MN
56431

SHELL OIL CO. W.A. ROQUET
ONE SHELL PLAZA BX 2463
HOUSTON TX
77001

SMITH MICHAEL
1423 NEWTON AVE N
MPLS MN
55411

SODERMAN ANTHONY
152 S PLAZA BLDG
MPLS MN
55416

STD AM LIFE & ANNUITY CO
3801 W 50TH ST
MPLS MN
55410

STUPKA & MOREM
MIDTOWN BLDG
AUSTIN MN
55912

SWANSON BURT E
W-2162 1ST NATL BK BLDG
ST PAUL MN
55101

TIMESAVERS INC ATT R S VOLD
5270 HANSON COURT
MPLS MN
55422

UNION STOCK YARDS
ATTN PRES
SO ST PAUL MN
55075

VAN EVERA MUNDT ET AL
700 TORREY BLDG
DULUTH MN
55802

VOSS REV GORDON O
11120 NE 7TH ST
BLAINE MN
55434

WELLINGTON R R SKELLY OIL
PO BOX 1650

SITE ENGINEERS INC
900 PEDWELL LANE
APPLE VALLEY MN
55124

SNELL LYN
BOX 314
EDEN VALLEY MN
55329

STANSFIELD ARLENE LAND OLKS
PO BOX 116
MPLS MN
55440

STEELWORKERS CREDIT UNION
BOX 250
BABBITT MN
55706

SULLIVAN J KIRK
PO BOX 200
BOISE ID
83701

SWANSON DALE
P O BOX 339
FOREST LAKE MN
55025

TATE VERN 3M CO
3M CENTER 220/6W
ST PAUL MN
55101

TOUCHE ROSS & CO K H STOCKE
780 NORTHSTAR CNTR
MPLS MN
55402

VERRILL JOHN E
DEPT SECONDARY ED UOF M
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55812

VOS LEROY
2137 BURNS AVE
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55119

WALTERS THOS H
4510 W 77TH ST STE 235
MPLS MN
55435

WESTIN CHAS W
220 MEDICAL ARTS BLDG

SLOCUM CHARLES A
1203 IDS TOWER
MPLS MN
55402

SNYDER ROBERT W
248 CO B U OF M
ST PAUL MN
55101

STATE BD.BARBER EXAMINERS
555 WABASHA
ST PAUL MN
55102

SUMMIT NATL BANK D L MORRILL
205 AURORA AVE
ST PAUL MN
55103

SWANSON GERALD H
212 CITY HALL
ROCHESTER MN
55901

THOMPSON CONRAD
1107 23RD ST NW
ROCHESTER MN
55901

TWIN CITY RETAIL DRUGGIST AS
2388 UNIV AVE
ST PAUL MN
55104

VAN CLEVE JOHN H
2101 HENN AVE
MPLS MN
55405

VILLAGE OF WOODBURY-E.STRONG
561 TOWER DRIVE
NEWPORT MN
55055

WANQUIST ALLEN
PM 252 FEDERAL BLDG
ST PAUL MN
55101

WHITING RALPH
555 WABASHA SUITE 204

SMERIKA WM.
BOISE CASCADE PAPERS
INTL FALLS MN
56649

SODERBERG HAROLD J
1500 MIDWEST PLAZA BLDG
MPLS MN
55402

STATE BD VETERINARY EXAMI
C/O DR A C SPANNAUS DVM
WACONIA MN

STOLPESTAD BROWN & SMITH
1550 NW PK BLDG
ST PAUL MN
55101

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ST PAUL MN
55108

SWEITZER R L HONEYWELL IN
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MPLS MN
55408

THOMPSON HESSIAN ET AL
1500 MIDWEST PLAZA BLDG
MPLS MN
55402

VAN DRAKE STEPHEN P
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PELICAN RAPID MN
56572

VOLDNESS PERRY
IDS 8TH & MARQUETTE
MPLS MN
55402

WALD JEAN
5746 SANDER DR
MPLS MN
55417

WELK G V NORTHERN STATES
414 NICOLLET MALL
MPLS MN
55401

WHITLOCK A G
ECON LAB OSBORN BLDG

PRAUSE JOS.C.
2220 105TH AVE.N.W.
COON RAPIDS MN
55433

PROCTOR&GAMBLE L THEOHARDUS
IVORYDALE TECH CENTER
CINCINNATI OH
45217

PULSCHER RBT SPRINGSTED INC
813 OSBORN BLDG
ST PAUL MN
55102

RADMAN RICHARD-LABOR TEMPLE
418 AUDITORIUM
ST PAUL MN
55102

RANALLO CLARENCE
830 CENTRAL AVE N E
MPLS MN
55413

RAMSEY CO MEDICAL SOCIETY
1500 LOWRY MEDICAL BLDG
ST PAUL MN
55102

RAUENHORST CORP-C ANDERSON
7900 XERXES S. S-2200
MPLS MN
55431

REAGAN MICHAEL
% MINN LEARNING CTR
BRAINERD MN
56401

RED OWL STORES INC
215 E EXCELSIOR AVE
HOPKINS MN
55343

REID DAVID H
5633 WASHBURN AVE S
MPLS MN
55410

REIND C LAINE 3M COMPANY
3M CENTER
ST PAUL MN
55101

RENNER R.H. ST PAUL AREA CC
300 OSBORN BLDG.
ST PAUL MN
55102

RENQUIST ARTHUR NSP CO
414 NICOLLET MALL
MPLS MN
55401

RICHARDSON THOS
7851 METRO PKWY S 103
MPLS MN
55420

RICHARDS MONTGOMERY ET AL
1430 RAND TOWER
MPLS MN
55402

ROE DAVID
175 AURORA
ST PAUL MN
55103

ROBBIE JOSEPH
904 CARGILL BLDG NO CTR
MPLS MN
55402

ROBERTS DAVID E
1260 NW NATL BK BLDG
ST PAUL MN
55101

ROSS ALFRED
6356 WARE RD
LINC LAKES MN
55014

RUDY FLOYD
118 AVE C
CLOQUET MN
55720

SAN SIMEON DEVELOP CORP
CLO 1ST STATE BK BLDG
PAYNESVILLE MN

SANFORD S M
7000 PORTLAND AVE
RICHFIELD MN
55423

SATHRE, HARVEY
375 MARION STREET
ST PAUL MN
55103

SAX DOVE & STENSON
310 ENDICOTT BLDG
ST PAUL MN
55101

ST PAUL ASSN PLBG HTG MEC
614 AM NATL BK
ST PAUL MN

ST PAUL BUR HLTH DR P COX
555 CEDAR ST
ST PAUL MN
55101

ST PAUL FOOD RETAILERS ASSN
1220 ARCADE
ST PAUL MN
55106

SCARBOROUGH WILLIAM
DIV.ED. U.M.
MORRIS MN
56267

SCHLICHT REV ROBT
611 W MAIN ST
BELLE PLAINE MN
56011

SCHMIDT D R MN ASSN REALTORS
6101 WAYZATA BLVD
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55416

SCHMIDT H W TCHRS RETIREMENT
302 CAPITOL SQ BLDG
ST PAUL MN
55101

SCHMIDT LARRY WCCO-TV NEWS
50 S 9TH ST
MPLS MN
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SCHNEIDER MAHLON
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SENATE COUN OFF ROOM 24
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ST PAUL MN
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SENATE FINANCE COMMITTEE
113 STATE CAPITOL
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SENATE GOV OP COMM
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'M CHARLES A
TOWER

SMERIKA WM.
BOISE CASCADE PAPERS

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MPIRG
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MPLS MN
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ST PAUL MN
55101

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PORT AUTH CITY OF ST PAUL
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BLOOMINGTON MN
55431

MUCK THOS P
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ST PAUL MN
55155

NATL CAR RENTAL ATT D MITZEL
5501 GREEN VALLEY DR
MPLS MN
55437

NCEC INC C/O DR DAHLBERG
CONCORDIA COLLEGE
MOORHEAD MN
56560

NEUMAN RALPH W
PT 2 BOX 125
EMBARRASS MN
55732

NORTH CENTRAL ELEVATOR ASSN
802 GRAIN EXCH BLDG
MPLS MN
55415

NYQUIST DEAN A
3707 53RD PL N
BROOKLYN CTR MN
55429

OLOFSON ARTHUR MBO & MAINC
927 SOO LINE BLDG
MPLS MN
55402

PATTISON ORVIS
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56201

PETERSON GARY
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55401

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55416

NEDELL HAROLD - MEINEKE
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NIELSEN STOCK & BLACKBURN
415 730 BLDG
MPLS MN

NURSING HOME ADMRS BD EXAMRS
RM 340 717 DELAWARE SE
MPLS MN
55414

O'BRIEN J.DENNIS
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MINNEAPOLIS MN
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OSTRUM DONALD E
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COON RAPIDS MN
55433

PAYNE COL ALVIN

DEGRAFF MN
56233

PFEIFER AND SHULTZ, INC
1433 UTICA AVE S
MPLS MN
55416

POPOVICH PETER S
314 MINN BLDG
ST PAUL MN
55101

POSS DONALD G
6301 SHINGLE CREEK PKWY
BROOKLYN CTR MN
55430

PULSCHER BRT SPRINGSTED INC
813 OSBORN BLDG

MORTON BUILDINGS INC
R #1
FOLEY MN
56329

NATL FAMILY INS CO
2147 UNIV AVE
ST PAUL MN
55114

NEREN MADONNA
376 NEAL AVE S
AFTON MN
55001

NO SUB MONTESSORI-S SADDL
2487 HELEN COURT
NO ST PAUL MN
55109

NUTTER JULIA
743 W MONTANA
ST PAUL MN
55117

OFFICE OF THE GOVERNOR
130 STATE CAPITOL
ST PAUL MN
55101

OTTER TAIL POWER CO.
215 S. CASCADE ST.
FERGUS FALLS MN
56537

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20005

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TRACY MN
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FERGUS FALLS MN
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SHAKOPEE MN
55379

MILLER PAUL J PHARMACY SERV
ST MARYS HOSP
ROCHESTER MN
55901

MINN APT ASSN
GRIGGS-MIDWAY BLDG
ST PAUL MN
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55101

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ST PAUL MN
55102

MINN ASPHALT PAVEMENT ASSN
555 WABASHA RM 209
ST PAUL MN
55102

MINN ASSN COOPERATIVES
55 SHEPBURNE AVE
ST PAUL MN
55103

MINN ASSN ELEC COOPERATIV
4901 W 77TH ST
MPLS MN
55435

MINN. ASSN. PET RETAILERS
1115 2ND AVE. SO.
MINNEAPOLIS MN
55403

MINN ASSN WATERSHED DIST'S

ADA MN
56510

MINN AUTOMOBILE DEALERS ASSN
GRIGGS MIDWAY BLDG
ST PAUL MN
55104

MINN COMM FOR HANDICAPPED
METRO SQ 492 7TH & ROBT
ST PAUL MN
55101

MINN COMMUNITY DEVELOP SERV
512 ROSSMOR BLDG
ST PAUL MN
55101

MINN COUNCIL STATE EMP NO 6
475 RICE ST
ST PAUL MN
55103

MINN DEPT HEALTH J C MCKASY
717 DELAWARE S E
MPLS MN
55440

MINN DENTAL HYGIENISTS
5041 YVONNE TERRACE
MPLS MN
55436

MINN ELECTRICAL ASSN INC
~~525 GRAIN EXCH~~ 3100 HUMBOLDT
MPLS MN AVE SO.
~~55415~~ 55408

MINN ENV LAW INST INC
PO BOX 15076 COMM STA
MPLS MN
55415

MINN FARMERS UNION PRES OFF
1275 UNIV AVE
ST PAUL MN
55104

MINN FOOD PETAILERS ASSN
555 WABASHA
ST PAUL MN
55101

MINN HEREFORD-LJ SCHAFER

BUFFALO LAKE MN
55314

MINN. HOTEL & MTR. ASSN
2001 UNIVERSITY AVE
ST PAUL MN

MINN HOUSING INST N T CARTER
7801 METRO PKWY
MPLS MN
55420

MINN HWYS MANAGEMENT SERV
407 HWY BLDG
ST PAUL MN
55101

MINN LAND USE COMMITTEE
4344 IDS CENTER
MPLS MN
55402

MINN LP GAS ASSN
7515 WAYZATA BLVD 106
MPLS MN
55426

MINNE MINE CREDIT UNION
3000 HUDSON PK S 100
ST PAUL MN
55119

MINN.MTR.TRANSP. .J.N.D
1821 UNIV.
ST.PAUL MN
55104

MINN PETROLEUM COUNCIL
1020 NORTHERN FED BLDG
ST PAUL MN
55102

MINN POULTRY & HATCHERY ASSN
BOX 158
MADELIA MN
56062

MN REP STATE CENTRAL COMM
555 WABASHA AVE
ST PAUL MN
55102

MINN RESTAURANT ASSN
2001 UNIVERSITY AVE.
ST PAUL MN 55
104

MINN RETAIL FEDERATION
7600 PARKLAWN STE 457
MPLS MN
55435

MINN RETAIL HARDWARE ASSN
3033 EXCELSIOR BLVD 313
MPLS MN
55416

MINN SOCIETY ARCHITECTS AIA
NW NATL BK BLDG
ST PAUL MN
55101

MINN SOC CERTIFIED PUB AC
1102 WESLEY TEMPLE BLDG
MPLS MN
55403

MINN STATE BAR ASSN
100 MINN FED BLDG
MPLS MN
55402

MINN STATE BD PHARMACY
717 DELAWARE ST SE #351
MPLS MN
55414

MINN STATE CAPITOL EMP UNION
PO BOX 3215
ST PAUL MN
55165

MINN STATE MED ASSN
375 JACKSON ST
ST PAUL MN
55101

MINN STATE RETIREMENT SYSTEM
529 JACKSON ST
ST PAUL MN
55101

MINN TEAMSTERS CREDIT UNION
2021 HENN AVE E
MPLS MN
55413

MINN TBR PRODUCERS ASSN
200 CHRISTIE BLDG
DULUTH MN
55802

MINN.TURKEY GROWERS ASSN
2383 UNIV AVE
ST PAUL MN
55114

MINN VETERANS MED ASSN
2175 W HWY 36
ROSEVILLE MN
55113

MINN WATER RESOURCES BD
RM 206 555 WABASHA ST
ST PAUL MN
55102

MINN-WISC BOUNDARY AREA COMM
600 2ND ST
HUDSON WI
54016

MN PUB INT RESEARCH GROUP
3036 UNIV AVE SE
MPLS MN
55414

SHELL OIL CO. W.A. ROQUET
ONE SHELL PLAZA BX 2463

SITE ENGINEERS INC
900 REDWELL LANE

SLOCUM CHARLES A
1203 IDS TOWER

SMERIKA WM.
BOISE CASCADE PAPERS

KNUTSON DR KEITH, BIOLOGY DPT
ST CLOUD STATE
ST CLOUD MN
56301

KNUTSON R N GRANNIS ETAL
E J SCHULT BLDG
ST ST PAUL MN
55075

KNUDSON PORT
4375 BROWNDALE AVE
MPLS MN
55424

KOLLER MR & MRS ERWIN A
1568 DULUTH ST
ST PAUL MN
55108

KOPP MRS VERNON
2050 65TH ST E
INVER GR HGHT MN
55075

KRAMER ERNEST W
717 DELAWARE ST SE
MPLS MN
55440

KRONLOKKEN J E
10049 NORD RD
BLOOMINGTON MN
55437

LAKE SUPERIOR INDUSTRIAL BUR
828 FIRST AM. BK. BLDG.
DULUTH MN
55802

LANAHAN E E - SIBLEY CO
184 E 6TH ST
ST PAUL MN
55101

LANGVIN DAVID
7500 80TH ST S
COTTAGE GROVE MN
55016

LANSING & OAKES
400 SIBLEY ST
ST PAUL MN
55101

LAPP LAZAR LAURIE ET AL
1200 BUILDERS EXCHANGE
MINNEAPOLIS MN
55402

LARSON C L
3800 MINNEHAHA AVE SO
MPLS MN
55406

LARSON HANS P DIV HOSP SERV
717 DELAWARE ST SE
MPLS MN
55440

LEAGUE MN MUNIC
300 HANOVER 480 CEDAR
ST PAUL MN
55101

LEAGUE WOMEN VOTERS OF MINN
555 WABASHA
ST PAUL MN
55102

LIBBEY LEONARD
BOX 17011 NOKOMIS STA
MPLS MN
55417

LINDALL & JONATHAN DEVELOP.
VILLAGE ONE CENTER
CHASKA MN
55318

LOCKNER GARY
R R 1 BOX 23
BAUDETTE MN
56623

LOOS CALVIN J
6809 LYNDALE AVE SO
MPLS MN
55423

LOWE DOUG
2701 N LEXINGTON AVE
ROSEVILLE MN
55113

LYNCH DONALD SIBLEY CO
184 E 6TH ST
ST PAUL MN
55102

MCDONALD PHILIP M
2077 SELBY AVE
ST PAUL MN
55104

MCFADDEN G H DISPATCH-PRESS
55 E 4TH ST
ST PAUL MN
55101

MCKIBBON MRS SHIRLEY
11 EVERGREEN LN
BABBITT MN
55706

MCLELLAN LARKIN
215 ADM BLDG ST CAPITOL
ST PAUL MN
55101

MALONE E I COMM LABOR & INDU
444 LAFAYETTE RD 5TH FL
ST PAUL MN
55101

MANKATO STAT STUDENT SENATE
CENTENNIAL STUDENT UN
MANKATO MN
56001

MANKATO STATE STUDENT AS
BOX 58 MANKATO COLLEGE
MANKATO MN
56001

MANTHEY T J PICKANDS MATHER
1100 SUPERIOR AVE
CLEVELAND OH
44114

MASTOR & MATTSON LTD
315 PEAVEY BLDG
MPLS MN
55402

MAUL WARREN E
320 S 4TH ST
MPLS MN
55415

MAYO FOUNDATION G CRWOLL
200 FIRST AVE NW
ROCHESTER MN
55901

MECCA
867 GRAND AVE
ST PAUL MN
55105

MEIEROTTO, JOAN
1794 SO LEXINGTON
ST PAUL MN
55118

MERRITT GRANT POLLUTION CONT
1935 W CO RD 32
ROSEVILLE MN
55113

MET TEA MEN ASSN A ROSENT
1821 UNIV AVE
ST PAUL MN
55104

METROPOLITAN COUNCIL LIBRARY
300 METRO SQUARE
ST PAUL MN
55155

MIDLAND GLASS- HD SPURLING
PO BOX 69
SHAKOPEE MN
55379

MILLER RICHARD A
1020 PLYMOUTH BLDG
MPLS MN
55402

MILLER TOM
2311 PILLSBURY AVE S
MPLS MN
55404

MPLS CHAMBER COMM TRANSP DPT
15 S 5TH ST
MPLS MN
55402

MPLS CITY ATTORNEY
325M CITY HALL
MPLS MN
55415

MPLS STAR PRESS ROOM
STATE CAPITOL
ST PAUL MN
55101

MPLS TRIBUNE CITY DESK
425 PORTLAND AVE
MPLS MN
55415

MIDLAND GLASS-HD SPURLING
PO BOX 69

MILLER PAUL J PHARMACY SERV
ST MARYS HOSP

MINN APT ASSN
GRIGGS-MIDWAY BLDG

MN. ASN.C&IND H.D.PETERSO
480 CEDAR ST.

HEISENFELT WM
BOX 516
BEMIDJI MN
56601

HICHINGER-MARK PLANNING
421 WABASHA ST
ST PAUL MN
55102

HILL JIM ASSOC.MILK PROD.
7850 METRO PARKWAY
MINNEAPOLIS MN
55420

HINRICHSEN PATRICK
MANKATO FREE PRESS
MANKATO MN
56001

HOLDAHL SCOTT
380 N BLDG GRAIN EXCH
MPLS MN
55415

HOLEY GEO AERONAUTICS
DOWNTOWN AIRPORT
ST PAUL MN
55107

HOLMES BUSTIS ET AL
4410 IDS CENTER
MPLS MN
55402

HOPKINS WM.R. DIR.MISCCA
3915 GOLDEN VALLEY ROAD
GOLDEN VALLEY MN
55422

HORNER WALDORF - KAZIUKEWICZ
PO BOX 3260
ST PAUL MN
55165

HOULE MELVIN
881 W HWY 96
SHOREVIEW MN
55112

HOUSE APPROPPIATIONS COMM
RM 109 STATE CAPITOL
ST PAUL MN
55101

HOUSE ED STANDING SUB COM
RM 109 STATE CAPITOL
ST PAUL MN
55101

HOUSE RESEARCH
RM 17 STATE CAPITOL
ST PAUL MN
55155

HULSTRAND ANDERSON & LARSON
PO BOX 130
WILLMAR MN
56201

HULTMAN WARREN R
C/O BARBAROSSA R3
OSSEO MN
55369

HUMAN RIGHTS
200 CAPITOL SQ BLDG
ST PAUL MN
55101

HUNT JAMES P JR
11470 GALTIER DR
BURNSVILLE MN
55378

HUTCHISON R.M. ANOKA CO.COMP
COURT HOUSE
ANOKA MN
55303

HYLAND DEAN
1501 W 50TH ST
MPLS MN
55419

ILLINGWORTH ROBT C
6750 FRANCE AVE S
MPLS MN
55435

INGERPIGTSEN DR K H
23 SE 4TH ST
MPLS MN
55414

INGVALSON VERN MN.FARM BUR.
3110 WOODDALE DR PO 337
OST PAUL MN
55165

INS FED OF MINN
902 SOO LINE BLDG
MPLS MN
55402

INTERSTATE POWER RW STEELE
1000 MAIN ST
DUBUQUE IA
52001

IUOE LOC 49 CHAS SWENSON
2580 UNIV AVE
ST PAUL MN
55101

IVERSON DR JOS DEPT ED
ST OLAF COLLEGE
NORTHFIELD MN
55057

IZAAK WALTON LEAGUE MN DI
MPLS MN
55404 111 E FRANKLIN AVE RM 210

JACKMAN DONALD G
4023 E LAKE ST
MPLS MN
55406

JAIN NIRMAL ENIV PROCESS
1220 GLENWOOD AVE
MPLS MN
55405

JENOS INC
525 LAKE AVE SO
DULUTH MN
55801

JENSEN CARL A
127 E MAIN ST
SLEEPY EYE MN
56085

JOHNSON & SANDERSON
ST MARYS HOSPITAL
ROCHESTER MN
55901

JOHNSON CLARENCE IBEW LU 292
3615 37TH AVE S
MPLS MN
55406

JOHNSON LEROY
9939 BLUEBIRD ST NW
COON RAPIDS MN
55433

JOHNSON M.D. FRUNDT & FRUNDT
BLUE EARTH MN
56013

JOHNSON LANCE J
265 S LAFAYETTE RD
ST PAUL MN
55107

KABLE RICHARD W
BETHEL MN
55006

KAVANEY RICHARD
1220 NORTHERN FED BLDG
ST PAUL MN
55102

KEABLE MIKE
909 6TH AVE N
ST CLOUD MN
56301

KEENAN RICHARD J
4444 IDS BLDG
MPLS MN
55402

KEILY DANILE
3549 V2 PLEASANT AVE
MPLS MN
55408

KIMBALL ROBERT
647 CAPITOL SQ BLDG
ST PAUL MN
55101

KLOSTER MARION PEAVEY CO
730 2ND AVE S
MPLS MN
55402

KLUZ STEVEN J
1910 1ST NATL BK BLDG
MPLS MN
55402

KNOPP TIMOTHY
COLLEGE FORESTRY U OF M
ST PAUL MN
55108

SHELL OIL CO. W.A. ROQUET
ONE SHELL PLAZA BX 2463
HOUSTON TX

SITE ENGINEERS INC
900 REDWELL LANE

SLOCUM CHARLES A
1203 IDS TOWER

SMERIKA WM.
BOISE CASCADE PAPERS

FELHABER R S
W 1ST NATL BANK BLDG
ST PAUL MN
55101

FLEMING FREDERICK A
1860 HIGHLAND PARKWAY
ST PAUL MN
55116

FOX W.E. LINDQUIST & VENNUM
4200 IDSCTR 80 S.8TH ST
MINNEAPOLIS MN
55402

FURLONG DR JOHN
RT 1
BOVEY MN
55709

GARDNER HOW - R A JOHNSON
515 WASHINGTON AVE N
MPLS MN
55401

GIEL DAVID
RM B-28 STATE CAPITOL
ST PAUL MN
55155

GRAHAM THOS H
854 MIDLAND BK BLDG
MPLS MN
55401

GREEN GARY J
41 SHERBURNE AVE
ST PAUL MN
55102

HAROLD J WESTIN CONSTRUCTORS
45 E 8TH ST
ST PAUL MN
55101

HAYES, THOMAS W
700 SELLWOOD BLG
DULUTH MN
55812

HARTFELDT WILL
434 HAMM BLDG
ST PAUL MN
55102

HEISENFELT WM
BOX 516

FINLEY JAMES F
920 MINN BLDG
ST PAUL MN
55101

FITZGERALD DR BOB
3007 LYNDALE AVE SO
MPLS MN
55408

FRANKLIN ROBERT B MPLS TRIB
426 PORTLAND
MPLS MN
55415

F W WOOLWORTH CO
3316 W 66TH ST
EDINA MN
55424

GEBERT K L
220 GRAIN EXCH
MPLS MN
55415

GLEESON MICHAEL
909 SOO SC BLDG U OF M
MPLS MN
55455

GRANATH MARVIN -HONEYWELL
2701 4TH AVE SO
MPLS MN
55408

GREEN JANET
9773 N SHORE DR
DULUTH MN
55804

H B FULLER CO
2400 KASOTA AVE
ST PAUL MN
55108

HARVEY MICHAEL
1390 W M HAHA PKWY
MPLS MN
55409

HEALTH MANPOWER C LARSON
717 DELAWARE ST SE
MPLS MN
55440

HEAD & TRUHN
1007 SOO LINE BLDG
MPLS MN
55402

HICHINGER-MARK PLANNING
421 WABASHA ST

FINNEGAN J.R.
55 E. 4TH
ST.PAUL MN
55101

FORBES GORDON MINN RRS ASSN
203 HANOVER 480 CEDAR
ST PAUL MN
55101

FREDIN CONRAD M
811 FIRST NATL BK BLDG
DULUTH MN
55802

GED A HORMEL & CO LAW DEPT
PO BOX 800
AUSTIN MN
55912

GLEN. HILLS HOSP.R.VAN HAUER
3901 GOLDEN VALLEY RD.
MPLS. MN
55422

GREATER MET AREA HOSPITALITY
5152 CEDAR AVE S
MPLS MN
55417

GUSTAFSON DAN-LABOR TEMPLE
312 CENTRAL
MPLS MN
55414

HANFT PHILIP M
1200 ALWORTH BLDG
DULUTH MN
55802

HALLBERG LEE & MCCABE
4927 34TH AVE S
MPLS MN
55417

HENTHORN GARY WOODSTOCK
7365 LANDAU DR
BLOOMINGTON MN
55438

HEIM PAUL
1320 SOO LINE BLDG
MPLS MN
55402

HILL JIM ASSOC.MILK PROD.
7850 METRO PARKWAY

FLADLAND CLINTON MN L&P B
796 RAYMOND AVE
ST PAUL MN
55114

FORSBERG AGR SERV
518 SUMMIT AVE
NEW ULM MN
56073

FREDRIKSON BYRON ET AL
47TH FLR IDS CENTER M
PLS MN
55402

GALVIN M J JR
W2162 1ST NATL BK BLDG
ST PAUL MN
55101

GEORGE K GRANSE CO
1477 SELBY AVE
ST PAUL MN
55104

GODIN RALPH J
3824 47TH AVE SO
MPLS MN
55406

GREEN DEL CITY MGR
BLOOMINGTON CITY HALL
BLOOMINGTON MN
55431

GUSTAFSON WALLACE
BOX 567
WILLMAR MN
56201

HANSON ETHEL
2813 85TH AVE N
MPLS MN
55444

HAUN DR J W GEN MILLS
PO BOX 1113
MPLS MN
55440

HART PATRICK V
112 E LIBERTY BOX 3271
MANKATO MN
56001

HEINTZ MARY ELLEN
PO BOX 599
CINCINNATI OH
45201

HINRICHSEN PATRICK
MANKATO FREE PRESS

CLARKSON J.B.
2350 I.D.S. CENTER
MINNEAPOLIS MN
55402

CLAUSEN PHILLIP
2307 STANDISH ST
ST PAUL MN
55108

COLEMAN NICHOLAS D
700 LINWOOD AVE
ST PAUL MN
55105

COLLIN LAURENCE
RT 2
ISANTI MN
55040

COMMUNITY DESIGN CENTER
118 E 26TH ST
MPLS MN
55404

CONCORDIA COLLEGE
DEAN
MOORHEAD MN
56560

CONSUMER SERVICES DEPT COMM
5TH FLR METRO SQ BLDG
ST PAUL MN
55101

COUNTY ATTYS COUNCIL
95 SHERBURNE AVE S203
ST PAUL MN
55103

CRAVEN NORMAN
10637 THOMAS AVE S
BLOOMINGTON MN
55431

CROW WING CO PLANNING & ADV
COURT HOUSE
BRAINERD MN
56401

CUSHMAN J S DAYTON HUDSON
700 NICOLLET MALL
MPLS MN
55402

DAILEY THOMAS ECONOMICS LAB
370 WABASHA ST
ST PAUL MN
55102

DANKERS,KENNETH
1200 WEST FOURTH STREET
RED WING MN
55066

DANIELSON RODNEY L
418 AUDITORIUM
ST PAUL MN
55102

DAYTON CHAS SIERRA CLUB
800 MIDLAND BANK BLDG
MPLS MN
55401

DEVELOP DISABILITIES PROGRAM
STATE PLAN 101 CAP SQ
ST PAUL MN
55155

DICKINSON MRS JOANNE
BOX 1065
MARSHALL MN
56258

DIEHL JOHN
26 KENWOOD PKWY
ST PAUL MN
55105

DISPATCH PIONEER PRESS
PRESS RM STATE CAPITOL
ST PAUL MN
55101

DORSEY MARQUART
2400 1ST NATL BANK BLDG
MPLS MN
55402

DOUGLASS BELL
525 OSBORN BLDG
ST PAUL MN
55102

DOW CHEMICAL
47 BLDG
MIDLAND MI
48640

DOYTON MAURICE, MET SEWER BD
350 METRO SQ BLDG
ST PAUL MN
55101

DUDLEY E H
RT 7 BOX 122
EXCELSIOR MN
55331

DUNN OLIVER PLUMBERS LOC 15
708 SO 10TH ST
MPLS MN
55404

DZUGAN KEN ST PAUL PLANNI
421 WABASHA ST
ST PAUL MN
55102

EPELING EDWARD H.
161 W. MAIN
PERHAM MN
56573

ELDER DR JAMES B
11140 WASHBURN AVE SO
BLOOMINGTON MN
55431

ELDRED R W ARMOUR & CO
UNION STOCK YARDS
SO ST PAUL MN
55075

ELMER EDWIN W
2901 PLEASANT AVE
MPLS MN
55408

EMERICK RICHARD A
1908 IDS CENTER
MPLS MN
55402

ENNIS A F BOISE CASCADE
PO BOX 713
INTL FALLS MN
56649

ENV SERV-GEN RESOURCE COR
6340 INDUSTRIAL DR
HOPKINS MN
55343

ERDMAN ROGER TENNANT CO
701 N LILAC DR
MPLS MN
55441

ERNEST K LEHMANN & ASSOC.
1409 WILLOW ST.
MPLS MN
55403

ESSE KENNETH
4801 W 50TH ST
EDINA MN
55424

ETHICS COMM
RM 410 STATE OFF BLDG
ST PAUL MN
55155

EVANS CHAS.L. PRENTICE-HALL
ENGELWOOD CLIFFS
NEW JERSEY

EVERETT JERRY NW PETRO ASSN
512 NICOLLET MALL RM917
MPLS MN
55402

EWALD DOUGLAS MINN HOSP ASSN
2333 UNIV AVE SE
MPLS MN
55414

EWING MRS WM
42 ASTAR RD
BABBITT MN
55706

FAEGRE & BENSON ATTN LIBR
1300 NW BANK BLDG
MPLS MN
55402

FARMERS ELEVATOR ASSN
852 GRAIN EXCH BLDG
MPLS MN
55415

FARRELL FRANK BUS NOR
RM 1180 176 E 5TH ST
ST PAUL MN
55101

ASSN RESIDENCES FOR RETARDED
459 RICE SUITE 301
ST PAUL MN
55103

AUTOMOBILE MFRS ASSN INC
55 SHEPPURNE AVE
ST PAUL MN
55103

BABCOCK LOCHER NELSON ET
118 E MAIN ST
ANOKA MN
55303

BADALICH JOHN P
2025 THOMPSON AVE
SO ST PAUL MN
55075

BARRETT FRED
ST LOUIS CO COURT HOUSE
DULUTH MN

BARTHOLOW HAROLD E FIRE CHF
2600 109 AVE N W
COON RAPIDS MN
55433

BECK PAT
953 HYACINTH AVE
ST PAUL MN
55106

BECKLIN ROBERT C
447 N W 4TH
CAMBRIDGE MN
55008

BEECHER EVERETT
10 10 1ST ST SO
HOPKINS MN

BEMIDJI STATE COLLEGE
PLACEMENT BUR.J.C.BRADY
BEMIDJI MN
56601

BENSON PETER USW OF AM
609 PROVIDENCE BLDG.
DULUTH MN

BERGERUD ALF
300 ROANOKE BLDG
MPLS MN
55402

BERGSETH THOMAS
1011 NICOLLET MALL
MPLS MN
55403

BEST FLANAGAN ET AL
4040 IDS CENTER
MPLS MN
55402

BEUTEL ROBERT
2200 SILVER LAKE RD
NEW BRIGHTON MN
55112

BLOMQUIST BARRY L

NORTH BRANCH MN
55056

BLOOMINGTON CITY CLERK
2215 W OLD SHAKOPEE RD
BLOOMINGTON MN
55431

BREHL JAMES W
332 HAMM BLDG
ST PAUL MN
55102

BRIGGS & MORGAN - B F FRI
2200 W 1ST NATL BK BLDG
ST PAUL MN
55101

BRIGHAM E M III
RR4
RED WING MN
55066

BROEKER JOHN
2850METRO DR. SUITE 504
BLOOMINGTON MN
55420

BROOKS WILLIAM F JR
854 MIDLAND BK BLDG
MPLS MN
55401

BROWN D M GOODRIDGE PUB S
IND DIST #561
GOODRIDGE MN
56725

BROWN H D
4961 KINGSBERRY LANE
MINNETONKA MN
55343

BRUBACHER RICHARD COMM ADM
208 ADM BLDG
ST PAUL MN
55101

BRUNING C.R.DEPT.CLINIC.EXP.
BURTON HALL
MPLS. MN
55455

BUCHHOLTZ CHARLES
5044 BRENT AVE E
INV GRV HTS MN
55075

BURGER ALBERT
600 DEGREE OF HONOR BLD
ST PAUL MN
55101

BUR.ENGR.IND.DIV. MR.KIBIGER
219 N. 2ND ST.
MPLS. MN

BUR NATL AFFAIRS INC
1231 25TH ST NW
WASHINGTON DC
20037

BUSCH NOEL
3131 FERNBROOK LANE N
MPLS MN
55441

CAIN RUTH
730 E 38TH ST
MPLS MN
55407

CAIRNS JOHN A
47TH FLR IDS CENTER
MPLS MN
55402

CARLSON CARL L
7516 80TH ST S
COTTAGE GROVE MN
55016

CARLSON VERNE E
BOX 755 CITY HALL
WILLMAR MN
56201

CARRISON DALE K
MANKATO STATE COLLEGE
MANKATO MN
56001

CENTRAL BUSINESS DATA
BENSON RADIO ARCADE BLD
BENSON MN
56215

CENTRAL MN REGIONAL DEV C
1139 FRANKLIN AVE
SAUK RAPIDS MN
56379

CHAMBER OF COMMERCE
30 SO 1ST AVE EAST
ELY MN
55731

CHAMBERLAIN JOHN L
PO BOX 241
MPLS MN
55440

CHERCHES CHRIS CITY MGR
5005 MTKA BLVD
ST LOUIS PARK MN
55416

CHRISTIAN SCI COMM ON PUB
1821 UNIV AVE SUITE 271
ST PAUL MN
55104

CHRISTIANSEN FREDRIK
RM 505 CAPITOL SQ BLDG
ST PAUL MN
55101

CHRYSALIS CENTER FOR WOMEN
2104 STEVENS AVE S
MPLS MN
55404

CITY CLERK
386 CITY HALL
ST PAUL MN
55102

CITIZENS LEAGUE
530 SYNDICATE BLDG
MPLS MN
55402

ALBERT,AA CALDER CORP
366 JACKSON ST
ST PAUL MN
55101

ALLENDORF MARSHALL
220 GRAIN EX 400 S 4TH
MPLS MN
55415

ALTMAN MILTON H
707 DEGREE OF HONOR BLD
ST PAUL MN
55101

AM CAMPING ASSN MRS LEACOCK
1235 BRIGHTON SQ
NEW BRIGHTON MN
55112

AM INST PROF GEOLOGISTS
2201 PRINCETON AVE
ST PAUL MN
55105

ANCHOR BLOCK COMPANY
PO BOX 3360
ST PAUL MN
55165

ANDERSON GRAHAM
951 E HENN
MPLS MN
55414

ANDERSON HERBERT
418 8TH ST. SO.
VIRGINIA MN
55792

ANDERSON HAROLD
BOX 3047
MANKATO MN
56001

ANDERSON JAMES
7703 NORMANDALE RD
MPLS MN
55435

ANDERSON STANFORD P
14600 MINNETONKA BLVD
MINNETONKA MN
55343

ANTHONY DICK WDSM RADIO
230 E SUPR ST
DULUTH MN
55102

ARNOLD ROBERT MESPA
41 SHERBURNE
ST PAUL MN
55103

ARROWHEAD REGIONAL DEV COMM
900 ALWORTH BLDG
DULUTH MN
55802

ARVER JOHN A
2467 COHANCY
ST PAUL MN
55113

ASMUSSEN,DENNIS,MPIRG
3036 UNIV AVE SE
MPLS MN
55414

ASSOCIATED GEN CONTROF MN
48 E 8TH STREET
ST PAUL MN
55101

ASSOCIATED INDUST OF MPLS
NATIONAL BLDG
MPLS MN
55402

ASSN OF MINN COUNTIES
55 SHERBURNE AVE #203
ST PAUL MN
55103

STATE OF MINNESOTA
OFFICE of SECRETARY of STATE

NOTICE of HEARINGS MAILING LABEL SYSTEM

NAME	ADDRESS	CITY	ZIP CODE
CAPITOL NEWS SERVICE	BOX 120367	ST PAUL	MN 55117
HUMAN SERVICES	5TH FLR HIGH LAFAYETTE RD	ST PAUL	MN 55101

PUBLIC SAFETY

Berry, Ed, Box 144, Emmons, Mn. 56029

Dawson, James M., Felhaber,Larson et al, W-1080 1st Natl Bk Bldg.,St.Paul, Mn 55101

Matthias, Dr. Howard, 329 Brown Hall, St.Cloud State College, St.Cloud, Mn. 56301

Ostern, Bill, 513 South Section, Spring Valley, Mn. 55975

Pure Power Company, 5917 View Lane, Mpls., Mn. 55436

Shields, J.B., Driver Ed. Range, 1000 N. Snelling Ave., St.Paul, Mn. 55108

St.Paul Motorcycle Escort Club, Inc., PO Box 3264, St.Paul, Mn. 55101

Thorson, Mork & Henefield, Attorneys, 1st Natl Bank Bldg, Blooming Prairie 55917

Interoffice – NOTICES OF HEARING

Special Assistant Attorney General

Commissioner

Assistant Commissioner

Safety Information
318 Highway Bldg.

Division &/or Section Head
of appropriate division(s)

Inter Office

Phillip A. Iverson
208 Administration Bldg.

Jerry Pavek
Department of Education
803 Capitol Square Bldg.

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REGULATIONS ON VEHICLE MODIFICATION

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Specialties, Inc.
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Lyle Stevens
Rural Route
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Tim Diers
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Kent Syverson
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David M. Maciejewski
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Donald Haaversen
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Mr. Larry Bewley
Allstate Insurance Co.
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Kenneth W. Paylor
Legislative Research Analyst
Motorcycle Industry Council, Inc.
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Sports Car Club of America
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Sgt. Gary D. Johnson
Breckenridge Police Department
Breckenridge. MN 56520

Lowell C. Bigelow, Judge
County Court
Big Stone and Traverse Counties
County Court House
Wheaton, MN 56296

Mr. Theodore Johnson
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Sgt. McPherson
Coon Rapids Police Department
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Mary Schweiger
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A.E. Choppers Inc.
730 Monroe Way
Placentia, Calif 92670

Motorcycle & Allied Trade
Safety Assoc.
6750 France Ave. So.
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Subaru of America, Inc.
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Pennsauken, New Jersey 08109

Baron Delaney
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Department of Education
803 Capitol Square Bldg.

Lakeside
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Mankato, Minn. 56001

Al Meyer
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301 N.E. Washington St.
Brainerd, Minn. 56401

Bob Roussopoulos
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St. Paul, Minn. 55107

Joan M. Anderholm
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Hamel, Minn. 55340

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Mike Flaherty
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Mpls. Minn 55409

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1001 E. Lawson Ave.
St. Paul, MN. 55106

Chuck Lewer
817 - 4th St. S.W.
Waseca, Minn. 56093

Michael Gordon
1612 S. Broadway
Albert Lea, MN. 56007

PUBLIC SAFETY

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Thorson, Mork & Henefield, Attorneys, 1st Natl Bank Bldg, Blooming Prairie 55917

STATE OF MINNESOTA
OFFICE of SECRETARY of STATE

NOTICE of HEARINGS MAILING LABEL SYSTEM

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ORIGINAL COPY

MINNESOTA DEPARTMENT OF PUBLIC SAFETY

SAFETY ADMINISTRATION DIVISION

In re:

CHAPTER NINETEEN

PROHIBITED ALTERATIONS OR MODIFICATIONS TO CERTAIN VEHICLES

Transcript of proceedings had on Public Hearing before the Minnesota Department of Public Safety on Tuesday, the 23rd day of December, 1975, commencing at approximately 1:00 o'clock in the afternoon, in Room 81 of the State Office Building, St. Paul, Minnesota.

* * *

APPEARANCES:

JAMES CRAWFORD, Chief of State Patrol;

FRED SUHLER, Special Assistant Attorney General; and

DIANE HAMILTON, Management Analyst.

* * *

WHEREUPON, the following proceedings were duly had: --

* * *

MR. CRAWFORD: My name is James Crawford. I'm Chief of the State Patrol of the State Department of Public Safety. I will be presiding over this hearing. The other members of the panel with me are: Fred Suhler, Special Assistant Attorney General and Diane Hamilton, Management Analyst of the Department of Public Safety. Is there anyone here who hasn't signed the attendance sheet? This hearing is being held on the 23rd day of December, 1975 in Room 81, State Office Building, St. Paul, Minnesota, commencing at 1:00 o'clock, p.m. and continuing until all representatives of associations or other interested groups or persons have had an opportunity to be heard concerning the proposed adoption of rules of the State Department of Public Safety governing the prohibition of alterations or modifications to certain vehicles. I will now read the statement of need. The above-captioned rules are not amendments to existing rules of the Minnesota Department of

Public Safety. The need to adopt these rules arises because modification and/or alterations of certain vehicle components can adversely affect vehicle handling, characteristics, or otherwise create a condition compromising public safety. The proposed rules are designed to prohibit vehicle modifications and /or alterations reasonably, likely to affect the safety of operation of a vehicle with respect to road clearance, center of gravity, braking and steering in light of commonly accepted motor vehicle engineering principles. It's signed Edward Novak, Commissioner of Public Safety, November 20th, 1975. All interested persons will be given an opportunity to give testimony limited to the subject of this hearing. It is permissible to present written material, which should be marked as an exhibit and introduced for the record. Any statements or briefs should be typed on eight and a half by eleven inch paper and may be submitted after the hearing to the Commissioner of Public Safety, State Highway Building, St. Paul, Minnesota, 55155. Such statements must be postmarked no later than midnight, January 13th, 1976. Those who have indicated on the attendance sheet their

desire to speak will be called upon first. Thereafter, any others will be given the opportunity to speak. Please speak clearly so that the Court Reporter does not miss anything. Before making your statement, introduce yourself, spell your name and give the name and address of the association you represent. Before we begin taking testimony Fred Suhler, the Assistant Attorney General here on the panel will explain the procedural rules and introduce his exhibits, the filing documents of the State Department of Public Safety.

MR. SUHIER: Thank you, Colonel Crawford. For the Reporter's benefit my name is spelled S-U-H-I-E-R. I have premarked already several exhibits. Exhibit A is an order for hearing on these particular rules, signed by Edward G. Novak, Commissioner of Public Safety, on the 13th of November, 1975. Exhibit B is a statement of need relating to these rules, dated November 20th, 1975, by the Commissioner of Public Safety, Edward G. Novak. Exhibit C is an order of hearing, dated November 14th, 1975, setting the hearing on these matters for this time and place. Exhibit

D is a certificate from the Secretary of State, of the State of Minnesota, relating to the giving of some person in the Department of Public Safety a list of all persons wishing a copy of the notice of hearing of this particular matter. That certificate is dated the 19th of November at 9:15 o'clock in the a.m. Exhibit E is an affidavit of mailing by Diane Hamilton, State Department of Public Safety relating to the proposed adoption of these rules, dated November 19th, 1975. Exhibit F is an order dated December 11th, 1975. by Commissioner Edward C. Novak designating Colonel James C. Crawford, Chief of the Minnesota State Patrol, as Hearing Examiner in these proceedings. I would offer A through F for the record at this time, Mr. Examiner.

MR. CRAWFORD: They will be received and become part of the record. At this time we'll call upon the people who in signing the attendance register indicated a desire to give testimony. The first person I'll call on is Robert Rose.

ROBERT ROSE: Ladies and gentlemen, I do have a copy of my prepared statement. My name is Robert Rose, R-O-S-E. I'm president of the Champion Auto Stores, 5806 West 36th Street,

Minneapolis, 55416. In my prepared statements I say, since installation of certain replacement parts, improved braking and steering or could be prohibited by the language used, I would suggest the following changes: In SafAd 167, Subsection A and D, replace the word affective with the word degrading. I have a note and explanation specifically, radial tires and heavy-duty shock absorbers improve braking and steering. In SafAd 169, Subsection C, number three should be stricken and replaced by spacers or other devices used to correct springs sag, S-A-G, will not be used to extend springs beyond requirements indicated in Subsection B. That would be in the same SafAd 169. Thank you, very much. I'll be happy to answer any questions.

MR. CRAWFORD: Thank you, sir. You're referring on 169, Section C, three, and you refer back to Subsection B. Is that of 169?

ROBERT ROSE: Yes. It applies to two inch perimeter. It seems to us that number three would eliminate the use of springs entirely which, of course, is impossible because cars forever are going to need spacers to take care of springs sag or other variables. They're in there even on

some new cars. We can't tell what new cars they are in so, to eliminate them would be taking away an important device that is used to correct sag and other deteriorating effects. So we say permit us to use the spring spacers and other similar things, but hold us to the perimeter of the two inches.

MR. CRAWFORD: The next is Bob Illingworth.

ROBERT ILLINGWORTH: My name is Robert Illingworth, I-L-L-I-N-G-W-O-R-T-H, National Motorcyle Dealers Association, 6750 France Avenue South, Minneapolis, Minnesota. Mr. Chairman, ladies and gentlemen, I have testified at prior hearings. I'm sure you remember for the Minnesota Dealers Association, National Dealers Association, Minnesota Motorcyle Riders Association. These entities and consumers applaud your decision to remove motorcycles from the regulations. Generally, people never come around and thank somebody for a job well done, but they'll be real quick to take your head off when you make a mistake. I'm sure that you are aware of that. I would like to take this opportunity to thank you for the job we consider well done, as far as the motorcycle industry. Only yesterday I was approached by a

delegation of Minnesota businessmen and hobbyists who asked me to represent their interests here today which are part and accessory sales for motor vehicles and the building of custom type automobiles. Because of the lack of time with this endeavor I haven't really had an opportunity to regulate the impact these regulations would have on their interests. Basically, these people don't feel that these regulations present a real threat to their business or hobby, but like the motorcycle industry they feel that they are somewhat vague and most certainly in some instances are surplus and somewhat unenforceable. They do not expect to be excluded from the regulations but would like to appeal to this committee to not rule on these regulations as they are written. As an alternative they propose to appoint a small committee of businessmen and consumers to meet with your committee and come up with regulations that are realistic, enforceable and understandable to the average layman. We had a meeting last night and very few people could understand some of the terms and statements in these regulations. We hope that you will consider this alternative as a method of completing your

assignment to a cooperative effort with your constituents. We will present a written brief within the time period provided by law.

MR. CRAWFORD: We will be looking forward to the filing of that. I would hope that the people you represent would get into specifics rather than the generalities which you were in today, in that brief that is filed.

ROBERT ILLINGWORTH: We hope to, yes.

MR. CRAWFORD: Is there anyone else that would like to speak to the regulations?

(No response.)

MR. CRAWFORD: We have a statement from the Department of Public Safety, State Patrol, regarding some of the things that are covered in the regulations which there is a need for because of the motor vehicle inspection program which is conducted by the State Patrol, in the State of Minnesota, on a random sampling. We also have some other exhibits which are letters from individuals and organizations pertaining to the rules which we will file as exhibits. Would you like to have for the record the exhibit numbers?

MR. SUHLER: I think we better. At this

time, Mr. Examiner, I will identify these documents and offer them in the record. I'll do the best job I can to describe very briefly to those in attendance what the point of the exhibit seems to be. Perhaps if it was necessary, we could have a brief recess, where people in the audience could examine these documents more closely if they felt that there was a point or two which may relate to something they might want to comment on. These will be part of the record. The first which we have identified as Exhibit G, is a letter from Donald W. Anderson, from Howard Lake, Minnesota. Mr. Anderson relates generally his comments with respect to these rules. I will characterize his comments as generally favorable. He refers to a couple of other matters which these rules do not address themselves to. Problems with gas tank construction, the practice of persons carrying gas in separate cans in the trunk of their vehicles and his views on the design of taillights on new vehicles as they are presently being delivered. Exhibit H is a letter from Dave Gibbens. His last name is spelled G-I-B-B-E-N-S, of Minneapolis, Minnesota. Mr. Gibbens appears to be a person who is an auto enthusiast, who has

some interest in antiques and custom automobiles. In a letter of about two pages, I would characterize his views on these proposed rules as unfavorable for a variety of reasons. Exhibit I is a letter from R. B. Knudson, K-N-U-D-S-O-N, Fairmont Railway Motors, Inc., generally noting that these regulations would exempt vehicles made by their concern from their purview and expressing some dissatisfaction in that respect. Exhibit J is a letter from the Automotive Parts and Accessories Association, Inc., by Don Prieto, P-R-I-E-T-O, director of technical services, in which he makes basically, I think, the same points that Mr. Rose made with respect to spacers on springs. Exhibit K is a letter from an individual by the name of Clem Pruszynski. The last name is spelled P-R-U-S-Z-Y-N-S-K-I, of St. Paul, Minnesota. Mr. Pruszynski is apparently in favor of regulations and has some personal views on modifications of exhaust systems. Exhibit L is a letter from E. W. Drislane, D-R-I-S-L-A-N-E, from the Friction Material Standards Institute, Inc. Mr. Drislane in his letter suggests certain modifications to the proposed safety administration number 170, which he characterizes as editorial. Exhibit M

is a memorandum from Major Richard G. Lueck, L-U-E-C-K, Minnesota State Patrol Operations, to Colonel James C. Crawford, dated December 22nd, 1975, setting forth in full the views of the Minnesota State Patrol. With respect to these rules, I would characterize his comments as generally favorable. Exhibit N is a document or a copy of a paper by W. D. Nelson entitled, The Influence of Vehicle Add Ons, Alterations, Maintenance and Use on Vehicle Safety. A paper of the Society of Automotive Engineers given in January of 1973, at the International Automotive Engineering Congress. I believe that Major Lueck's memorandum refers to this document. Exhibit O is a letter from a person by the name of Jim Behrends. That's B-E-H-R-E-N-D-S, of Brewster, Minnesota, relating to these rules. I would characterize his comments generally as unfavorable. Exhibit P is a letter from TRW, Inc. of Cleveland, Ohio by J. R. Kelley, K-E-L-L-E-Y, an engineer relating to these rules. I would characterize his comments as generally unfavorable. I believe their product is involved here. It has something to do with suspension parts on vehicles. Exhibit Q which I have marked, are the written remarks of

Mr. Rose, as previously testified in these proceedings. I will offer, therefore, Exhibits G through Exhibit Q for the record and your consideration in these proceedings, Mr. Examiner.

MR. CRAWFORD: I would like at this time to take about a five minute recess in case anyone in the audience would like to look at these documents and make any verbal rebuttals to them.

(At this time a brief recess was taken.)

MR. CRAWFORD: After reading and looking over the Exhibits, does anyone have any other statements to make? Mr. Rose.

ROBERT ROSE: I would like to just put emphasis on the TRW letter. I don't think it's adverse comments; I think they are very helpful comments, very specific and they kind of point out what I believe the Highway Commissioners tried to do in these regulations, was to put some very complex judgment matters in just a few words and it's almost impossible. As a private business owner, our biggest worry in almost all of the government regulations, for the last few years, has been the tendency for them to non-competitors. That seems to be in the automotive field. A desire

to have that automobile just the way it came out of the factory and consequently left the original producers of the automobile and the sellers of it capture all the replacement parts. That's our business too, selling replacement parts. So consequently, we become very protective of our business when there is a hint that we might be legislated out of it. We make the claim, much of what we do is good in that we can improve over the original design. We shouldn't be prohibited from that but anything that we decry is misuse of our parts that are on the highway and cause safety hazards, we want to be supportive of all rule making legislation that prohibits such.

MR. CRAWFORD: Well, in your presentation those were the areas which you had concern or -- regulation in your words, using the process of rule making. Those were the only areas in these proposed rules where you see what you described?

ROBERT ROSE: I think the rules as they exist or possibly as we would suggest that they be amended, are well within the objectives of the whole of your program. The problem is, who makes those decisions. Let's assume that you instead of

saying that you're . . .

MR. CRAWFORD: Degrading, affecting.

ROBERT ROSE: Instead of saying affecting, we used the word degrading. Degrading from where, or affecting it how? Adversely or favorably? Now, I know what you are going to revolve around to. You're going to say, well, like the car was when it was designed. I would say that's fine as a starting point as long as we can go up from there, not backward.

MR. CRAWFORD: I think the implication of the rules is that it would be a degrading or an adverse affect upon those areas which the rules address themselves to. The steering modification, center of gravity and so forth. I want to make sure from your last statement, what you have filed and what your reference to the TRW letter was?

ROBERT ROSE: They are not necessarily the same.

MR. CRAWFORD: No, but the statements you made are addressed in those two statements?

ROBERT ROSE: Yes.

MR. SUHLER: For the record, Mr. Examiner, I characterized certain of these exhibits as favorable or unfavorable or whatever. I would

say only that I had a very brief time to review them and my comments, I think, would involve determination by the trier of fact here, the Hearing Examiner, as to whether or not they are in favor or not. I take no position on whether that is. I was just trying to characterize them for purposes of those in attendance.

MR. CRAWFORD: An introduction into the record?

MR. SUHIER: Yes.

MR. CRAWFORD: Are there any others that would like to make a statement?

(No response.)

MR. CRAWFORD: If not, 20 days will be allowed for the post-hearing submission of evidence, statements or briefs. Such statements should be typed on an eight and a half by eleven inch paper, mailed to the Commissioner of Public Safety, State Highway Building, St. Paul, Minnesota, 55155, postmarked no later than midnight, January 13th, 1976. The hearing will be adjourned.

* * *

REPORTER'S CERTIFICATE

I, Marie A. Then do hereby certify and state that I recorded in stenotypy the proceedings had before the Minnesota Department of Public Safety on December 23, 1975, at Saint Paul, Minnesota.

I further certify and state that thereafter and on this date I transcribed into typewriting the foregoing transcript of said proceedings, consisting of the preceding sixteen typewritten pages.

I further certify and state that said transcript of such proceedings is true and correct to the best of my ability.

Marie A. Then
Court Reporter

Dated this second day
of January, 1976.

Exhibit G



Howard Lake, Minn.
Nov. 22, 1975

Mr Edward G. Novak
Comm. of Public Safety
St. Paul, Minn. 55155

Dear Mr Novak:

Thank you for a copy of proposed rules regarding modifications of certain motor vehicles.

The proposed rules, I feel are well defined and should be carried out with the safety of all motorists in mind.

I would like to express my thoughts in another area of a motor vehicle modification which is becoming widespread during a time of higher price gasoline.

I have observed a number of auto owners install extra gasoline tanks in the trunk compartments of their autos. Some are not fastened very well or do they have proper venting, also some have inside the trunk filler openingg, which is not safe. If this so equipped were involved in a rear end or any other collision, all concerned would be in grave danger.

On brand new autos, compacts are the worst, the gasoline tanks are mounted too far to the rear, and do not have proper protection in case of a rear end collision. The bumper is all that is between the tank and striking object. Needless to say, the new car bumpers are for looks only. No protection is given, at this very vital area.

One more thing that is a problem in our northern winters is, Some models choose to recess the rear tail lights. Snow and ice form and conceal the lighted rays. I have noted when following that this could be a cause of accidents. Pehaps the Mfgs. could use cone shaped desing as in the 1950 era.

I am very intrested in auto saftey, also in safe auto desinging and feel more research in needed to promote a better and safer mode of transpertation to the public.

I would like a copy of new rules as they are printed, and again thank you for your concern.

Sincerly,

Donald W. Anderson

Donald W. Anderson
Box 169A Rt. 2
Howard Lake, Minn. 55349

Exhibit H

23 November 1975

Dave Gibbens
92 Arthur Ave SE
Minneapolis MN 55414



Edward Novak
Dept. of Public Safety
State Capitol
St. Paul MN

Dear Sir:

I read with some mixed feelings your proposals for the adoption of new regulations SafAd 166 - 171.

As an auto enthusiast who is close to various facets of the antique/special interest, street rod and sports car hobby, I think that a few of the points made in these rules are unnecessary and burdensome for some owners, while the majority is just plain good sense. My objections are stated as follows.

First, there is no way a law enforcement officer can know if an "offending vehicle" was altered prior to whatever date these rules are adopted, short of the vehicle's date of manufacture, and this will not be evident for several years yet. I think we'll see people being needlessly detained and hassled on these grounds, and yet I see no alternative to the grandfather clause included, since there are so many cars in non-compliance whose owners may have spent money amounts approaching five figures. The street rods' and others' owners would have quite an investment to protect, and might oppose any outlawing of there vehicles -- they may oppose some of the other provisions as currently written, as well.

Next, the regulations that the vehicle underparts may be no closer to the ground than the wheel rim were not necessarily met by a number of autos when originally manufactured. Many extremely low-slung sports cars and a number of luxury sedans fit this category, the sedans because their immense 9;50x14 and similar-sized tires raised the wheel rim to perhaps a foot or so from the ground. But in any case, I know of no convincing arguments that suggest that low ground clearance adversely affects safety of the vehicle; on the contrary, a low-riding vehicle has two advantages. They have a lower center of gravity aiding roll characteristics and cornering capability, and since the volume of airflow beneath the vehicle is reduced, thus cutting turbulence in the least aerodynamic area of the vehicle, the gasoline mileage may be increased some 10-15%.

Other than a few cars, such as Citroen and Packard which were equipped with load-leveling rear suspensions, most cars cannot comfortably be driven with anything near the rated load in the vehicle, primarily because the rear suspension is so undersprung under these circumstances. This also is true for trailering mediun and larger loads. The very items which help most in these circumstances are those which will raise the rear bumper; i.e., stiffer springs. A two inch limit is not at all appropriate here -- you should allow more leeway in the rules, say perhaps 6" instead. The adjustable load-leveler devices on the market using air bladders for lift can be used to remain within the two-inch limit, but these are rarely durable enough for serious use -- in fact, they were abandoned as unfeasable after a two-year trial on some of GM's luxury sedans some years ago.

The lash and free play limitations suggested will unfairly penalize certain car owners while ignoring the problems of others. Not only is the size of the steering wheel a factor in lash, as you have realized, but also the steering gear ratio, as you have not. A car with a high number of turns, lock-to-lock, will naturally exhibit greater steering wheel play, in proportion to the ratio involved. And with cars on the road having the ratios from 25:1 to 8:1 (rough figures) you can see that steering play need not be just a cause of equivalently worn parts. The wear in steering components on cars with the high ratios will seem magnified with respect to those with low ratios, although actual safety

of the system may be equivalent. As for play measured at the front wheel tread, this also is affected by the steering gear ratio, since any slack at the steering gear box may be proportionately greater assuming equivalent wear. In addition, the tire size is an important factor here too; I measured diameters of from 19 to 33 inches on my automobile tires, a factor of about .58. Your proposal would thus be more nitpicking on the cars with larger tires, by nearly a factor of 2.

I think you should abandon the proposals which I have contended, or at the very least make allowance for tire size, steering gear ratio, vehicle usage and similar factors. And not the least of which is the attitude shared by many: "Get off my back!" While I do not have or contemplate having any vehicles which would come under these regulations, I think you're going overboard a bit with these proposed rules.

I wish I had time to attend your hearing in December, but employment takes precedence.

Regards,

Dave Gibbons

Exhibit I

FAIRMONT RAILWAY MOTORS, *Inc.*

MAINTENANCE-OF-WAY EQUIPMENT AND MOTOR CARS

TELEPHONE: 235-3361
AREA CODE: 507
TWX 910-565-2122

GENERAL OFFICES AND FACTORY
Fairmont, Minnesota 56031

November 25, 1975



State of Minnesota
Department of Public Safety
210 A Highway Building
St. Paul, Minnesota 55155

ATTN: Mr. Edward G. Novak
Commissioner of Public Safety

Dear Mr. Novak,

Re: MS1974, Section 15.0412, Subdivision 4 in the matter of the proposed Adoption of Rules of the State Department of Public Safety Governing Prohibited Alterations or Modifications to Certain Vehicles.

SafAd 168 EXCEPTION (d) "To a vehicle altered or modified for use on railroad rails as well as on highways" will exempt Hy Rail equipment as manufactured by Fairmont Railway Motors and we approve of this exemption from compliance to the proposed regulation.

Very truly yours,

FAIRMONT RAILWAY MOTORS, INC.

R.B. Knudson
Chief Engineer

RBK/pt

Exhibit J

AUTOMOTIVE
PARTS &
ACCESSORIES
ASSOCIATION
INC.



5 December 1975

Mr. Edward G. Novak
Commissioner of Public Safety
State of Minnesota
Department of Public Safety
210 A Highway Building
St. Paul, Minnesota 55155

Subject: M.S. 1974 - Section 15.0412, Subdivision 4

Dear Mr. Novak:

In the matter of proposed Adoption of Rules of the State Department of Public Safety Governing Prohibited Alterations or Modification to Certain Vehicles:

Reference: SafAd 169 Road Clearance, Center of gravity section (C) subsection (3). "Spacers are not used to extend springs."

the Automotive Parts and Accessories Association (APAA) feels that this subsection is unduly prohibitive in that we feel the intent of the law is to control the misuse of spring spacers. Our members who manufacturer and install spring spacers do so, with the intent of restoring a vehicle to its original ride height. These devices when properly applied improve the safety of a vehicle containing springs that have sagged by returning it to its designed ground clearance.

May we suggest language that: Spacers are not used to extend springs beyond specifications spelled out in section SafAd 169 subsection (b).

1730 K Street, N.W. Washington, D. C. 20006 202-833-3450

OFFICERS
President
*MICHAEL N. ORREN
Orren Sales Company
Vice-President
*JACK L. EDEN
Union Carbide Corp.
Vice-President
*JOSEPH B. MITTELMAN
Mittelman, Smith, Wynn, Inc.
Vice-President
*PHILIP TREMBOT
Republic Engineering & Mfg. Co.

Secretary
*C. W. HIGGINS
Montgomery Ward & Company
Treasurer
*BERTRAM KAPLAN
Kastar, Inc.

DIRECTORS
FLOYD ADELMAN
Empire Warehouse Supply Co.
JOHN N. ARGOS
Wells Manufacturing Corp.
NORMAN BERKE
ROBERK
STUART BELKIN
Crown Auto Stores Inc.
BRUCE E. DIXSON
Dixson, Inc.
D. J. DOVER
Do-Ray Lamp Co., Inc.
BERNARD H. FRANK
Steel City Products
JOHN GRANT
Grant Bros. Sales Ltd.
DALE GREEN
J. P. Knight & Sons, Inc.
*VICTOR GELB
Woodhill Chemical Sales Corp.
KENNETH HERSHEY
Maxim Hershey Sales Co.
D. W. HENNIGS
Cooper Tire & Rubber Co.
MURRAY KLEIN
Aid Auto Stores, Inc.
WALTER W. KUHN, JR.
Guarantee Auto Stores, Inc.
ARNOLD KRAGEN
Kragen Auto Supply Inc.
SHELDON KIRSHNER
Anes Electronics Inc.
P. H. NOZNESKY
General Battery Corp.
GERALD ROSENFIELD
Rayco International Inc.
HENRY ROSE
Rite Autotronics Corp.
HERBERT L. RECHTER
Allied Accessories & Auto Parts Co.
STUART SLOAN
Schuck's Auto Supply Co., Inc.
DONALD SCHLENGER
Roth-Schlenger, Inc.
CHARLES SCHWARTZ
Target Auto Stores
*JULIAN C. MORRIS
Executive Vice-President
*Executive Committee

As we feel the intent of the law is to remove from the Minnesota highways, those modification which clearly adversely affect vehicle safety. APAA would wholeheartly endorse these rules if the aforementioned amendment were made.

Cordially,

Don Prieto
Director of Technical Services

DP/jp

cc: R. E. Rose
Lou Baney

12-9-1975 Exhibit K

1001 E Lawson ave
St. Paul Minn 55106

Minn. Dept of Public Safety
211 State office Bldg.
St. Paul Minn 55155



Dear Mr. Novak Commissioner.

In connection with proposal to ban modification of passenger motor vehicles. The opinion of the people in my district and myself is fully in support of the proposal, but we want the proposal rules to include all motor vehicles modified before this law takes effect, not only those modified after the law takes effect as now proposed, also ban should include motor vehicles exhaust systems to conform to original manufactures equipment to stop noise pollution, Modification of motor vehicles is a public nuisance and annoyance and is a wrong to the welfare and safety of the people of Minnesota. We strongly oppose this nonsense and the hot-rodding done on the highways and streets of our cities.

This is our public testimonal and may be used as such. We trust the above will be acted upon promptly.

Yours truly,
Clem Pruszynski

Referable to
Public meeting
as of Dec. 23, 1975

CLEM PRUSZYNSKI
1001 E Lawson Ave
St. Paul, Minn 55106

Exhibit L

TELEPHONE (201) 845-0440

FRICTION MATERIALS STANDARDS INSTITUTE, INC.
BERGEN MALL OFFICE CENTER
E. 210 ROUTE 4
PARAMUS, N. J. 07652

December 12, 1975

State of Minnesota
Department of Public Safety
Highway Building
St. Paul, Minnesota 55155

Attention: Mr. Edward G. Novak, Commissioner of Public Safety

Gentlemen:

The Friction Materials Standards Institute is a Trade Association representing most of the United States manufacturers of brake linings, as well as many manufacturers around the world. Our members manufacture brake linings for both original equipment and replacement purposes.

We would like to have these comments considered at your public hearing on the proposed rules for Prohibited Alterations or Modifications to Certain Vehicles scheduled for December 23, 1975 in St. Paul. In particular we refer to:

SafAd 170 BRAKING SYSTEM

(d) Replacement brake lining must not have a normal friction coefficient below that of Class Code E (not over 0.35) or a hot coefficient below that of Class Code D (not over 0.25) as identified in the Vehicle Equipment Safety Commission Regulation V-3.

We believe this is a realistic and enforceable requirement for brake linings, and the Institute supports this proposal. Our support is for SafAd 170, Part (d) and we are not commenting on other sections of the proposed regulations.

However, we do suggest editorial changes to include the full definition of Class Code E and Class Code D. We believe this section should be re-written "...Class Code E (over 0.25 but not over 0.35) or a hot coefficient below that of Class Code D (over 0.15 but not over 0.25) as identified in the Vehicle Equipment Safety Commission Regulation V-3."

We appreciate this opportunity to comment on the proposed regulations.

Sincerely,

FRICTION MATERIALS STANDARDS INSTITUTE

E W Drislane

EWD/erc

E. W. Drislane
Executive Director

ADMIN. 1000

STATE OF MINNESOTA EXHIBIT M5.

DEPARTMENT OF PUBLIC SAFETY - Patrol

Office Memorandum

TO : Colonel James C. Crawford
Chief

DATE: Dec. 22, 1975

FROM : Major Richard G. Lueck
Operations

2000-09-105

SUBJECT: Modified Vehicle Hearing

The "road clearance" of a vehicle is the distance from the surface upon which the vehicle stands to the lowermost part of the vehicle other than the wheels or tires. Road clearance is the primary factor governing the degree of variation in the height of surface which a vehicle can negotiate without becoming stalled or deflected because of contact between the ground and the bottom of the vehicle.

The "center of gravity" of a vehicle is the point within the vehicle at which the weight of the vehicle and load is theoretically concentrated. Center of gravity is a major factor in the stability of a moving vehicle. A low center of gravity enhances stability while a higher center of gravity adversely affects vehicle stability. Center of gravity is directly related to a vehicles tendency to roll over in maneuvers involving change of vehicle heading or skidding.

Properly functioning brakes are essential to safe vehicle control, both with respect to stopping distance and directional control of the vehicle during braking action. To maintain full directional control during moderate and severe braking actions it is essential that brakes on wheels at opposite ends of each axle function in a balanced manner and that substantial brake imbalance does not exist upon the vehicle as a whole.

The steering system is the primary component by which directional control of a vehicle is maintained. The steering wheel must be of sufficient diameter to impart mechanical leverage to the steering system to enable a driver of modest strength to adequately steer the vehicle.

Excessive lash and/or free play in a steering system degrades steering capability and imposes excessive work load upon the driver in maintaining directional control. Excessive concentration on the steering task induces driver fatigue at an early level.

R. Lueck

Major Richard G. Lueck
Operations

RGL:md

cc: 2000-09-105
2000-02-020

"EXHIBIT N"

Reprinted with permission of the Society of Automotive Engineers, Inc.

The Influence of Vehicle Add-Ons, Alterations, Maintenance and Use on Vehicle Safety

W. D. Nelson
General Motors Proving Ground

SOCIETY OF AUTOMOTIVE ENGINEERS

International Automotive Engineering Congress
Detroit, Mich.
January 8–12, 1973

730228

730223

The Influence of Vehicle Add-Ons, Alterations, Maintenance and Use on Vehicle Safety

W. D. Nelson
General Motors Proving Ground

ABSTRACT

The fad of do-it-yourself automobile customizing began in the late 1930s with cropped roofs. Today, this practice of altering the vehicle from the "as-built" condition continues, offsetting in most cases, the manufacturers' safety design improvements. The purpose of this paper is to call attention to some of these alterations that have compromised occupant safety, using examples from actual field accidents.

Some of the situations illustrated show that tachometers and other miscellaneous devices which are attached to the steering column abort the compressibility of the energy-absorbing device, increasing chest injuries. These add-ons are also injury sites for the upper and lower limbs.

Another modification is to alter the suspension geometry to achieve a dragster appearance. The raising of the rear end exposes the fuel tank, normally protected by the rear structure from direct contact by another vehicle in a rear-end collision situation. An example of how these changes increase the injury risk to an occupant of the striking car is shown.

Other items include upper and lower instrument panel alterations and add-ons, visibility, removal of headrests, and maintenance. The magnitude of the role played by these owner modifications is not known, but case studies confirm that they are factors in the annually reported traffic deaths and injuries.

THE VEHICLE was an austere vehicle in its infancy, and much of the comforts and utilization of the car depended upon the resourcefulness and ingenuity of the owner, as illustrated in Fig. 1.

As the number of automobiles grew, it was inevitable that the talents of the younger generation would show up in modifications of used cars. "Chopped" roofs (Fig. 2) were popular in the late 1940s and early 1950s, and probably posed visibility limitations on the drivers. Today, we find owner modifications being made by persons of all ages, which either intentionally or unintentionally compromise their safety and the safety of their passengers. Examples taken from accidents that occurred on United States roadways are illustrated to show clearly the effects of these vehicle changes.

SUSPENSION SYSTEM

One popular modification is to alter the suspension, either for appearance, drag racing, or both. What the owner-driver does not realize is that raising the rear end is extremely dangerous, because it can expose an otherwise well-protected fuel tank. In addition, the center of gravity and the roll center are also shifted and can result in unexpected changes in the steering and handling.

The fuel tank normally has the protection of the rear bumper, rear sheet metal, and the stiffness of the rear frame members. This protection is reduced when the rear end is raised and the tank is exposed to direct impact by a striking vehicle, as in Fig. 3. The raising of the rear of the struck car

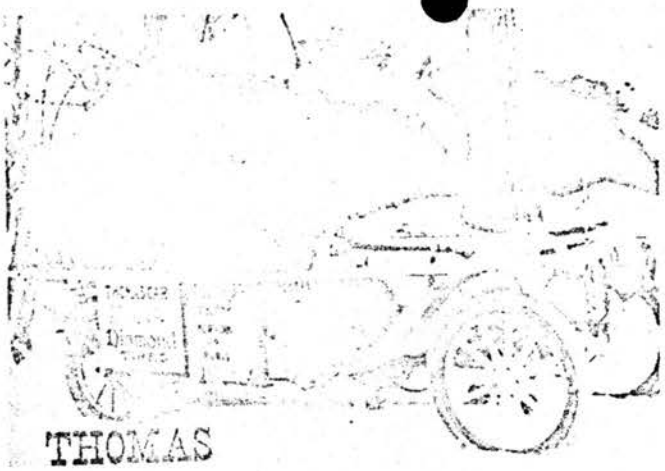

Fig. 1 - Thomas car, one of many entered in New York to Paris race

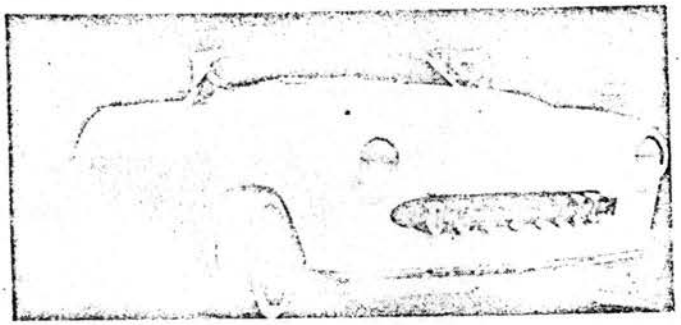

Fig. 2 - Chopped roof, popular in the late 1940s and early 1950s



Fig. 3 - Fuel tank exposed to direct impact when rear suspension is altered

with air lifts in this case exposed the gas tank to the other car (Fig. 4), and the frame extension of the striking car punched a hole completely through the tank and disengaged it from the vehicle (Fig. 5). Both cars, which may have been repairable, became, unnecessarily, total losses in the subsequent fire. The driver of the modified vehicle in Fig. 6 had been drag racing after dark, and either stalled or blew his engine. He left the occupantless, unlit car in the roadway, where it was rear-ended. The exposed fuel tank was ruptured and the car burned. Again, a needless fire. A greater tragedy involved the death of the other driver, a 17-year-old female,



Fig. 4 - Another view of exposed tank of vehicle in Fig. 3

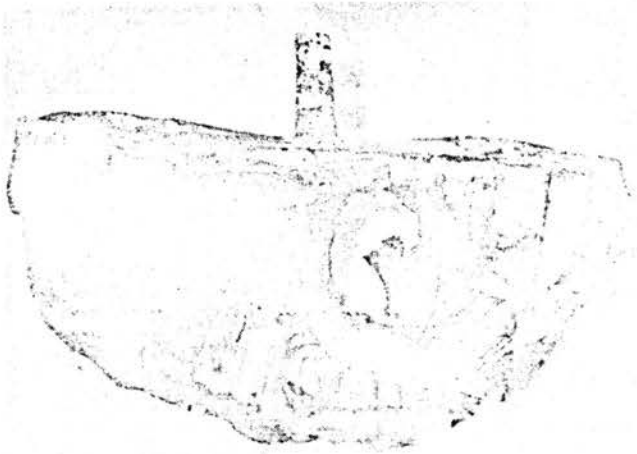

Fig. 5 - Hole punched through and disengaged tank of car in Fig. 3

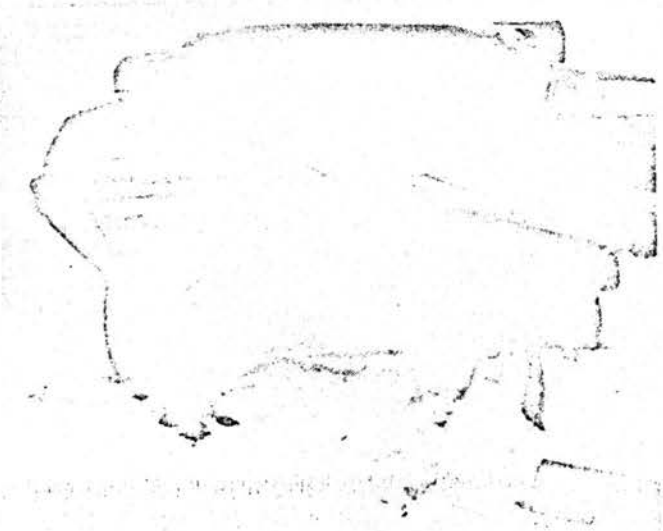

Fig. 6 - Unlighted modified car, deserted, rammed from rear after dark

and can also be related to the struck car's rear-end alteration. In Fig. 7, note the extensive crush above the wheels of the striking car, caused by the high rear-end position of the struck car. Neither front wheel was damaged, nor were the

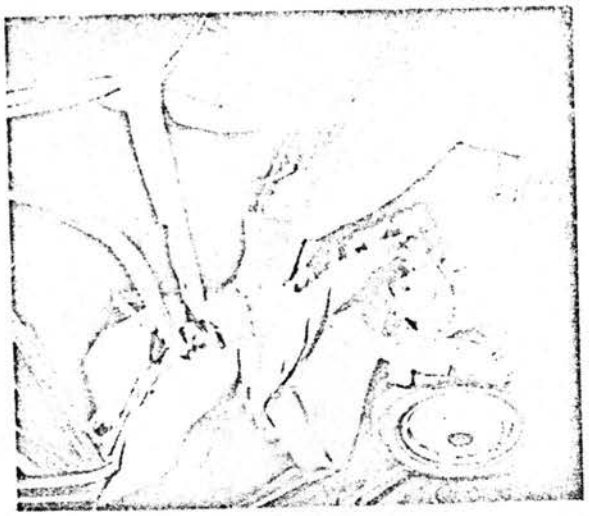

Fig. 7 - Car which struck vehicle shown in Fig. 6



Fig. 8 - Altered rear suspension, lock-outs on front coils to stiffen springs

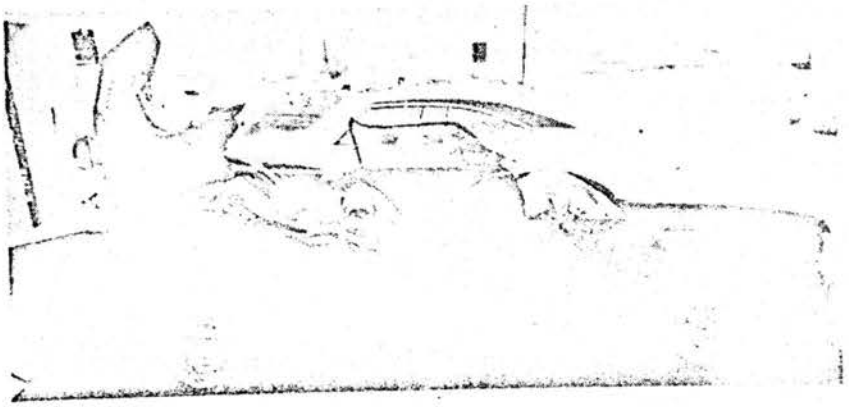

Fig. 9 - Same vehicle as shown in Fig. 8 after driver lost control when correcting for drift and entering shallow ditch; passenger lost life when car slid along ditch and into tree

tires deflated. The driver died several days later of thoracic injuries.

Modifying the suspension also changes the designed center of gravity, which can adversely affect the handling of the vehicle.

This car had an altered rear suspension and lock-outs on the front coils to stiffen the springs (Fig. 8). The driver lost control when he corrected for a slight drift during a speed run check, with a friend as a passenger, and entered a shallow ditch. The car slid along a ditch until it struck a tree, killing the front passenger (Fig. 9).

STEERING ASSEMBLY

The steering wheel is often a forgotten safety feature of the steering assembly by the owner. The wheel is the interface for distributing the driver-impact forces between the driver's chest and the energy-absorption column during frontal collisions. Adding spinner hubs to the wheel, as shown in Fig. 10, could produce unpredictable wheel deformation and concentrated forces on the body. Contrary to popular belief, this add-on device does not improve handling. It makes handling more difficult during cornering maneuvers, because the lateral inertia of the body reacts through the single arm on the wheel and inadvertently produces steer inputs (overcorrection) beyond those intended by the driver, whereas,

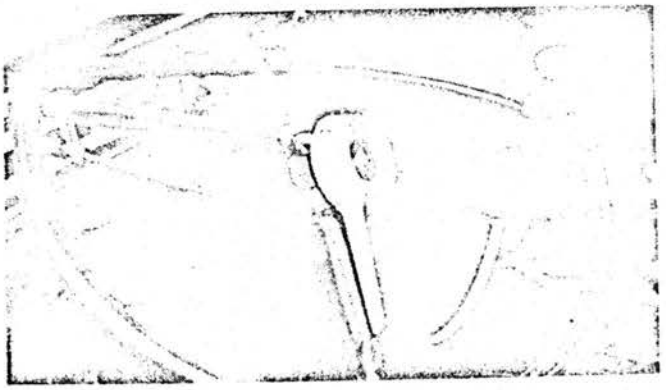

Fig. 10 - Spinner hub on steering wheel. This addition can make handling more difficult

two hands, located at 3 and 9 o'clock on the wheel, balance these effects and allow the control to remain with the driver.

Many owners like the sport car appearance, but, rather than buying a wheel designed and tested for the steering system of their particular car, they purchase wheels which do not have any test requirements. The driver who was behind the wheel illustrated in Fig. 1 was a promising young athlete. He became a paraplegic when the wheel broke and subjected him to very concentrated forces that injured his spinal cord.

The energy-absorbing (EA) steering column is an important safety feature which requires space to compress in order to



Fig. 68 - Minor injuries resulted to lap-belted driver of this vehicle when he became confused as to which was brake and which was throttle control–both are operated with same hand

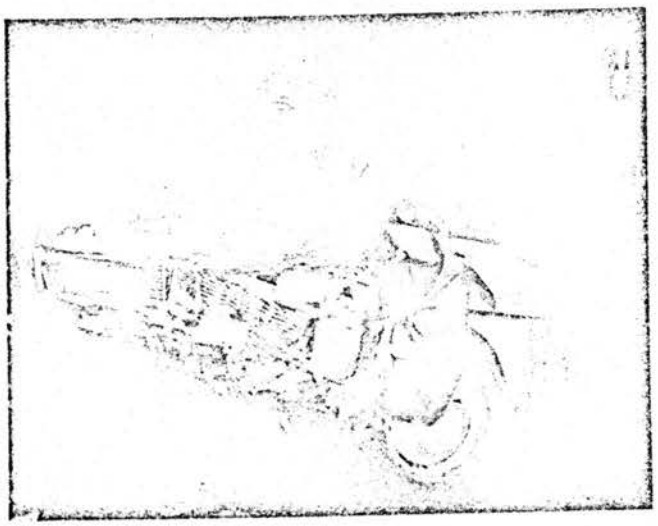

Fig. 69 - Police car after head-on collision at 40 mph

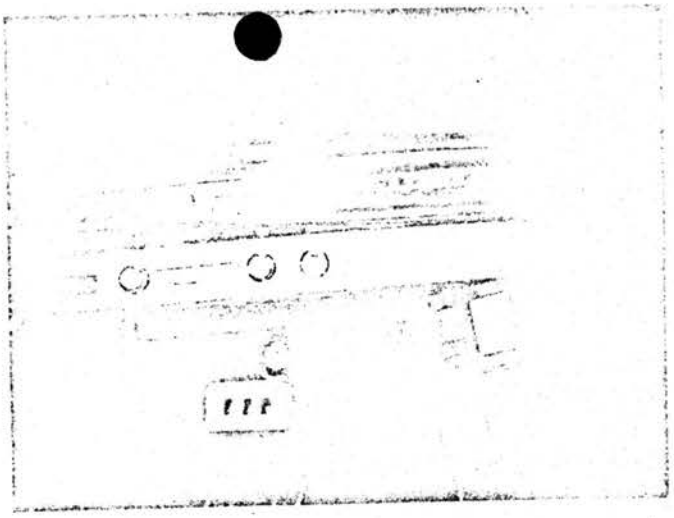

Fig. 70 - Interior of vehicle shown in Fig. 69 where officer, sitting in passenger seat next to driver, had facial lacerations, broken ribs, and a broken leg, related to shotgun mount under instrument panel

SUMMARY

The data and illustrations for this paper are from GM studies* supported by material selected from AMA-sponsored collision investigations which include the University of Michigan, Highway Safety Research Institute, Don Huelke; Cornell Aeronautical Lab., John Garrett, et al.; and the former University of California at Los Angeles project conducted by Arnold Siegel. Similar vehicle modifications have also been reported individually by the NHTSA multidisciplinary accident investigation teams in the Dept. of Transportation publications.

There is no real way to estimate accurately how many of these types of vehicle changes occur. Consequently, this study is a clincial review of what can happen, rather than a statistical study. It is important to remember that they all contain examples of factors which contribute to injury in motor vehicle accidents. If additional gains are to be made in injury reduction, strong emphasis must be placed on the role of the driver-owner.

*R. A. Rogers, GM-ADAP, "An Efficient System for the Collection, Storage, and Retrieval of Accident Information." August 1969.

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Society of Automotive Engineers, Inc.
TWO PENNSYLVANIA PLAZA, NEW YORK, N.Y. 10001

20 page booklet. Printed in U.S.A.

"EXHIBIT O"



Minnesota Dept. of Public Safety
Division of Motor Vehicles
Highway Building
St. Paul, Minn. 55155

Dear Sirs;

I strongly oppose the passage of any bill that would limit vehicle modification more than what the law now governs. The reason I feel this is because certain alterations actually improve road handling and cornering characteristics of cars over the mushy suspensions they now come equipped with. I believe that this is the same argument chopper riders had, which is why you should drop this law.

I also oppose the proposed ~~law~~ standard of motorcyclists to wear goggles and face shields. I oppose this for the simple reason that it is totally unconstitutional, as are helmets. If seat belt bumpers were declared unconstitutional in cars, the helmet law would be exactly the same and should be repealed, immediately, instead of adding more restrictions for the sake of "safety", as were seat belt bumpers. In fact, helmet laws are worse because you have to wear the helmet, and you didn't have to have seat belts around you.

In summary, I feel that such laws for "safety" are nothing more than one more step toward a communist type of government in this country. I truly hope that the government sees this and stop these two proposals dead in their tracks. May I also suggest that [redacted] people who don't have the faintest idea about the bill not be allowed to bring up such a bill. Let motorcyclists ~~and~~ and only motorcyclists vote and see if they want helmets and goggles to be required, for they are the only ones affected and should have the total say on what they do. They came as for every other organization that tries to govern others lives such as gun control, anti hunting, anti fishing, anti trapping

and so many other special interest groups. Let the affected people vote so that they do what they think is right, not some bureaucrat from the Dept. of Public Safety that has never ridden a motorcycle. How do these ~~[illegible]~~ bureaucrats that ride in big Cadillacs know what true handling of a correctly altered bike is - Lets get some sense into our laws -

Sincerely,
Jim Behrends
RR#2 Box 75
Brewster, Minn. 56119

"EXHIBIT P"

TRW



December 18, 1975

Mr. Edward G. Novak
Commissioner of Public Safety
State of Minnesota, County of Ramsey
Department of Public Safety
210 Highway Building
St. Paul, Minnesota 55155

SUBJECT: TRW's Comments on Minnesota's Proposed Rules Under Chapter Nineteen Entitled: "Prohibited Alterations or Modifications to Certain Vehicles" to be Discussed in a Public Hearing on December 23, 1975.

Dear Mr. Commissioner:

TRW regrets that they will be unable to attend the subject meeting and hope that the following comments on the Rules will be duly considered before the State of Minnesota adopts any final rules on this subject matter.

General Comments

TRW does not dispute the fact that rules along the lines that Minnesota is proposing are needed and that, properly constituted, could result in greater safety on Minnesota's highways. As proposed, though, they could result in extra expenses that could not be justified by the results they would achieve. One proposed rule would permit the operation of vehicles with serious operating defects; serious to the extent that vehicle steering could be lost immediately after passing an inspection. (This will be further discussed in the specific comments that follow.)

It appears to us that some of the proposed rules apply more to general inspection standards than they do to alterations or modifications to certain vehicles.

Specific Comments

1. SafAd 169, Road Clearance, Center of Gravity.

REPLACEMENT DIVISION OF TRW INC. • 8001 EAST PLEASANT VALLEY ROAD • CLEVELAND, OHIO 44131
AREA CODE 216 • TELEPHONE 383-2121

Mr. Edward G. Novak
Commissioner of Public Safety
State of Minnesota, County of Ramsey

December 18, 1975

A. SafAd 169, Part (b)

This part states that "no vehicle shall be altered or modified so that when unloaded: the front or rear of the body has been raised more than two (2) inches from its distance to the ground as manufactured,..."

At first glance, this rule seems logical and desirable. We suggest, however, that because of the problems associated with measuring points and the use of overload springs that a three inch rear bumper height limit be used rather than a two inch limit.

Measuring problems arise because it is impossible to find an accurate common point on all vehicles from which to measure the vehicle height and trim measuring points vary from vehicle to vehicle. This is further complicated by the fact that there are spring overload devices on the market that raise vehicle rear bumper heights about two inches in the unloaded condition. Therefore, unless an accurate, easily useable, bench mark can be found on each vehicle, these spring overload devices are apt to be ruled off the road. Doing this would result in more cars being on the road in a dangerous tail down condition. Such a condition can result in poor headlight aiming and poorer vehicle control, plus perhaps shorter life of some chassis components.

Some states have proposed an allowable three inch increase in rear bumper heights. This tolerance alleviates the problems of making difficult measurements but original bumper heights still have to be determined for each application.

B. SafAd 169, Part (c) (3)

This part states that: "Any permitted alteration or modification to the road clearance or center of gravity of a vehicle shall be accomplished so that spacers are not used to extend springs".

TRW would like clarification on this part. It seems to permit the use of spacers if the center of gravity and road clearance are not extended above the original specifications. If this is so, then we agree with the intent of the rule.

If the rule is attempting to ban spacers altogether, then TRW feels that there should be additional dialogue between the technical people of your department and interested industry chassis specialists. Properly designed and applied coil spring spacers can be economically justified and do not cause hazardous conditions. TRW is the first to agree that the best repair for a sagged front end is the installation of new coil springs. Coil springs, however, do cost considerably more than spring spacers and the people of Minnesota should not always be forced to accept a higher cost option when there may be another way to effect a safe repair.

Properly designed and installed coil spring spacers in many cases facilitate a good wheel alignment. If they are not used, many people cannot or will not buy new springs and a wheel alignment job on such a vehicle is less effective.

C. SafAd 171, Steering System

This section states in part that the steering system of a vehicle shall not be altered or modified so that: (b) lash or free play in the steering system exceeds values as shown in Table 1 and (c), there is free play in the steering linkage measured at a front tread, greater than one-quarter of an inch.

Both of the above rules are normally inspection standards rather than modification limitations. Be that as it may, neither should be adopted as written. Part (b) is apt to reject too many vehicles and part (c) is apt to permit the operation of unsafe vehicles.

Part (b) should be modified so as to call for the engine to be running on power steering equipped vehicles when the lash is measured. If this requirement is not written into the rule, then some perfectly safe vehicles will never pass this requirement.

Part (c) will <u>not</u> sort out some potentially dangerous vehicles. Steering linkages can be worn almost to the point of complete separation but still exhibit no more than 1/4" free play. It is entirely possible a vehicle could pass a 1/4 of an inch free play test and the linkage then fail so that the vehicle could not be steered out of the building where the test was made.

Mr. Edward G. Novak
Commissioner of Public Safety
State of Minnesota, County of Ramsey

December 18, 1975

Steering linkage tests should be made with the weight of the vehicle on the wheels and the suspension at normal trim height. Under these conditions, most steering connectors (tie rod ends) and all adjusting sleeves should exhibit no looseness as the steering wheel is turned and the linkage moved. There is one type of centerlink or pitman arm connector that can exhibit some looseness under these conditions and still be safe.

In order for mechanics or inspectors to be competent in inspecting steering and suspension systems for safety, they need a certain amount of training. I'm sure the industry would be willing to offer information to the State of Minnesota to aid them in reaching such an objective. For the present purpose, however, we would suggest that the language should specify that no modification to the steering linkage should introduce any free play.

Conclusions

TRW strongly urges Minnesota to reconsider their proposed rules, keeping in mind the comments we have made. We are certain that other manufacturers, as well as ourselves, would be more than willing to aid Minnesota in arriving at sound inspection standards and/or modification limits.

Sincerely yours,

TRW REPLACEMENT DIVISION

J. R. Kelley
Administrative Engineer

JRK/la

TOP VALUE AUTO SUPPLY, INC.
5806 West 36th Street, Minneapolis, Minnesota 55416
(612) 925-3474

"EXHIBIT P"

December 23, 1975

Department of Public Safety
St Paul, Minnesota 55155

SUBJECT: M.S. 1974 - SECTION 15.0412, SUBDIVISION 4

Gentlemen:

Since installation of certain replacement parts improve braking and steering, but would be prohibited by the language used, I would suggest the following changes:

In SAF Ad 167 subsection (A) and (D) replace the word "affecting" with the word "degrading".

Note: Specifically, radial tires and heavy duty shock absorbers improve braking and steering.

In SAF Ad 169 subsection (C) number (3) should be stricken and replaced by:

(3) Spacers or other devices used to correct spring sag will not be used to extend springs beyond requirements indicated in subsection (B).

Yours truly,

R. E. Rose

RER/km

Exhibit R Jan 8, 1976

Sirs:

This document is the result of the announcements of hearings concerning motor vehicle changes sent me awhile back. I arrived just after the finish of the first, I could not attend the second. I would like to offer this thought: Modified cars - "HOT RODS", "street rods" - are atrocious - to look at, to be near. But I don't think of them as being arbitrarily dangerous.

One thing can be said in their favor: MOST equipment in their vehicles is in fully workable order - something you CAN'T say for the everyday motorist.

Codes are fine, only if regularly, thoroughly enforced. Ours are not.

If you making changes, why not make a thorough change - from "top to bottom" - and Concentrate on the real hazards involved? My writing carries this through! THANK YOU

Max B Jones.

A BRIGHTER DAY FOR THE MINNESOTA MOTORIST
A PRECEDENT SETTING PROGRAM FOR DRIVER IMPROVEMENT

Driving is no longer fun!

It probably wasn't meant to be -- fun -- in the dictionary sense of the word. It is after all an important, serious action requiring steady, sober attention. Yet it can be -- to a great degree; I can recall that in the past it was a frequently enjoyable experience and one I looked forward to.

Not so any more.

Aside from the fun element (and there should be some) there is another factor that has been effected -- and seriously hampered: the use of a vehicle for quick, safe, effective means of transportation for bodies and commerce.

An operator should at least have a just foundation for believing he/she will arrive at an appointed destination with a minimum of harassment and jeopardy to his goods and/or person. And the operator should be able to do so with only a reasonable amount of energy expended.

Very few drivers experience this -- perhaps only during periods of very light traffic and on little traveled roads.

Each trip for most of us is instead a constant and fraying battle for survival. Every time one puts a vehicle on a roadway he/she glaringly puts his/her life and future

welfare into the hands of thoughtless, indifferent, undisciplined operators. And far more often than need be, he/she becomes the loser.

For awhile, I wondered if this feeling was only mine. After talking (and listening) to my shuttle bus riders, I realized otherwise.

What makes the situation so frightening is the frustration and hostility which inevitably builds up in even the best of us. The driving skills of the better of us seem so futile; the skills debilitate; and soon we take the initiative and retaliate; we take the offensive and become the offender. Driving moves from a "game" to a "demolition derby", the roadway becomes a "no-person's land".

There is far to great a disparity in the abilities and attitudes of this country's vehicle operators! It is a dangerous disparity -- one that represents a continuous threat to all of us. This need not be! It can be changed! The powers-that-be must first recognize the situation, be attentive to it, and take hard, positive, to some -- painful steps to correct it.

Some will be inconvenienced, some will take the steps as a direct affront. A few will respond with a sense of unjustified rage. Many will take the steps as a very real (again unjustifiable) threat to their well-being. The great majority will greet them with a great sense of relief, and the long awaited, long overdue "light at the end of the LONG TUNNEL dark" they've all been waiting for.

What I present here represents a comprehensive program -- one that covers and directly effects every facet of driving across the state. Each area is totally important to the overall program, the program suffers if any part is diminished.

Some will be time consuming and expensive. Others represent mostly a change of attitude, and greater emphasis in particular areas.

Three positive results will be realized: traffic deaths, injuries, property damage will fall markedly; the money previously lost on some will be saved; driving will become truly a pleasure.

The steps are as follows with the first step having the most immediate effect -- personnel.

I -- An increase in the constitutional limit of the State Highway Patrol; and a subsequent increase in the real personnel of the patrol. At present the constitutional patrol limit is 504, the active patrol numbering 478 (as of mid-summer, 1975). Our patrol does a fine job considering the limitation forced upon them.

It is my belief that our highways are not adequately patrolled -- a fluid relationship between the patrol and the public they are mandated to serve is non-existent. Such a regular open relationship must exist if there is to be any understanding of patrol policies and procedures, and any "feedback" from the public to the patrol. What results Now is

suspicion, animosity, and contempt. I suspect that not a small amount of this exists now.

Enough on duty patrolmen should be available to allow 20 to 30 minute separation of patrolcars in each direction on all freeways during the morning and evening rush hours! (A big order!) Enough on duty patrolmen to allow "saturation" patrols in any area where motorists are flagrantly ignoring traffic advisory and demand signs. (Example: No left turn areas, misuse of entrance/exits on interchanges (Dale - S.T.H. 36), use of turn lanes as passing lanes, etc.)

Much of greater control of traffic movement and individual driving behavior does not involve additional laws; only a readjustment of priorities and more personnel to enforce the laws now in effect.

This would be a great step -- a meaningful one.

II - A "crash" program of upgrading of all state motor vehicle and driver testing centers.

It was stated in a news article on our present testing facilities that freeway skills were not tested in the Metropolitan center because all centers had to give the same test; since rural area drivers don't encounter freeways (so they conclude), the skills are not tested. Since they are not tested in rural areas, they are not tested here. Urban drivers are the lesser for it!

← MORE "ROAD BLOCK" VEHICLE AND LICENSE CHECKS CAN BE REALIZED.

So the theory goes. But in reality, freeways are reaching all areas of the state -- and "rural" drivers are driving to areas where freeways exist! (High school tourney time becomes a prime attraction for otherwise rural motorists. It must be traumatic for some.)

Tests should never be given in cars which are not completely functioning. (State cars -- same cars for every examinee should be provided.) A person to be tested should be required to be accompanied by another licensed driver. No failed examinee should be allowed to return to the highways -- in effect "unlicensed".

Our "quickie" test would be expanded to a longer, tougher, more thorough, three-step exam:

(1) Closed course -- no traffic.

(2) Closed course -- traffic (state drivers creating "sudden" unexpected, challenging situations).

(3) Open road -- regular road driving.

If a prospective driver had any weaknesses they would most assuredly become apparent during one or all of these. The examinee would proceed to each step only if in the examiner's viewpoint the next step could be handled satisfactorily.

Failed prospects would be encouraged and offered an opportunity to correct their weakness in one of two ways: state driving experts would work with them on state tracks

(certain days and hours would be set aside and opened for this purpose) or they would be assigned to any private driving school they chose. This would prevent the leaving of their improvement (if we are to have any real hope for the same) to fate or imprecise teachers (friends, relatives, etc.).

I believe that even today -- after all the years of testing that Minnesota has had, there still exists far to large a percentage of untested drivers. As such:

III -- The frequency of testing needs to be changed. Instead of our "once saved, always saved" situation as the Fundamental Christian says, we must institute regular testing. I suggest re-examination every eight years until age 55, then every four years. Also as a necessary adjunct to this, drivers must have medical exams at <u>least</u> every eight years, as is the procedure for fliers, accepting reports of private doctors.

Disabilities will not be arbitrary cause for denial of license, but each person must show ability to handle a vehicle predictably and responsibly. Persons with diabetes and epilepsy and such can be considered fair and tolerable risks (more so than alcoholics and the like).

In order to re-examine everyone in an orderly fashion, drivers would be taken in groups: truckers, (cross country), truckers, (local), fleet drivers (van/delivery, taxi, bus and limousine), and general public.

For the first groups their "exam" would be mostly review and enlightenment -- and they would have their licenses "notched" accordingly.

For the general public, the real thorough test would be faced. At first great numbers of drivers would fail. Yet as time went on, and second and third tests were taken, and the examinee knew the state "meant business", the original failures would improve and pass.

I genuinely feel that many seemingly poor drivers are really better than they let themselves be. The new procedures would compel them to be better.

I am prompted to conclude that the motor vehicle industry is the only industry where we sell highly sophisticated units to persons without any proof of ability to handle such units reasonably. It is not, perhaps the only industry, but the area of highest incidence.

Persons purchasing recreational vehicles (RV's) should be required to show proof of ability to use them capably. The same should apply for persons buying or renting trailers and trucks. (THE SIZE AND WEIGHT OF THESE UNITS PRESENT SPECIAL PROBLEMS.)

IV -- Wreck and deterioration laws -- this is in only a limited way related to the other moves. It is the only one of the four which could be ignored and not appreciably effect the overall impact of the program. It is nonetheless an important part of the program, and the presence of the others provide an ideal opportunity for this.

It is very depressing to see all of the "renegades from a junkyard" one encounters on the roads. They may not themselves be involved in accidents, their conditions being responsible for an accident, but they do provide a distraction -- requiring added attention by others. They could create an accident that they may not be a part of! In accident prone situations, their faulty brakes, faulty lights, broken windows could reduce the margin of safety necessary to avoid an accident. The injuries to persons could be worse.

When I speak of "renegades from a junkyard", I speak of seriously faulty automobiles, with badly damaged fenders, doors, hoods, etc., seriously rusted to the degree that light assemblies can no longer be accommodated.

Our state law does not require even minimal functioning doors and windows. Doors that have to be wired shut (LEGALLY ALLOWABLE) are a hazard to occupants, particularly after an accident.

The law should be broken into these areas:

A. Every car damaged in an accident would be tagged -- could not be driven on any public road until repaired. Such repairs would be visually verified before tag was cancelled, and vehicle re-certified.

B. Each vehicle would be inspected at time of each registration. Cars must have adequate and functioning lights (all), brakes, steering, glass and safety belts. Small dents and mild rust would be acceptable as long as the vehicle is structurally sound and safely operable.

(IT MAY NOT BE PROPER TO 'FORCE' PEOPLE TO WEAR BELTS, SO BE IT IF THEY CHOOSE TO DISREGARD THEM; BUT THERE IS NO EXCUSE FOR REMOVING AND DISABLING THEM, CAUSING THEM TO BE INOPERABLE. THEY SHOULD BE AVAILABLE IF DESIRED.)

* ALL ASSISTANCE SHOULD BE PROVIDED TO HELP OWNER FIND A REASONABLE, SAFE REPLACEMENT

C. Each car sold would have to meet the same standards before transfer could be affected.

Any vehicle which is clearly beyond any reasonable, practical repair would be purchased for destruction. (All opportunity would be given to the owner to bring vehicle to standard; and all assistance would be available to the owner as a means of insuring those repairs would be made.)

* I am reminded of a car I saw with the hood lid bowed in such a way that it blocked at least half of the driver's view (he had to look over or under it); it was anchored at all points only by wire; the trunk was the same; both tail light lens broken, one headlight; one door pushed in; two of four side windows severely cracked and the windshield cracked.

This need not be allowed; it can be controlled. And it is not as rare as one might conclude.

There is no excuse for trailers (owned and regularly used) being pulled without minimal running lights, brake lights, and signals! I see them all the time.

Chances of success? Rare. Costly? Not as much as it might seem. It would involve more time for reorganization than money; more a matter of willingness to admit the problem and do the job.

More control -- less freedom? Hardly. More control of the irresponsible -- much more freedom <u>from</u> fear and <u>for</u>

living for the responsible. They will feel no difference in their livelihoods except in the pronounced enjoyment in driving.

Better drivers mean greater cooperation among motorists when one is troubled; fewer traffic jams, smoother traffic flow -- less time spent on the road -- more time spent in living itself!

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Exhibit 5

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OUR FILE NO.

January 14, 1976

State of Minnesota
Department of Public Safety
Commissioner Edward G. Novak

Gentlemen:

Enclosed, please find a Memorandum in support of Modifications to the Proposed Rules of the Department of Public Safety concerning Prohibitive Alterations or Modifications to Certain Vehicles.

These recommendations have been prepared in accordance with comments and proposed changes recommended by representatives of the custom-automobile industry and hobby-car enthusiasts through their Legislative representative, Robert C. Illingworth.

Should there be any questions concerning matters herein, please don't hesitate to contact either myself or Robert C. Illingworth at 6750 France Avenue South, Suite 290, Minneapolis, Minnesota 55435, 612-927-4493.

Sincerely,

Thomas L. Steffens/mt

Thomas L. Steffens

TLS/mt
Enclosure

M E M O R A N D U M

TO:

State of Minnesota
Department of Public Safety
Commissioner Edward G. Novak

RE:

Proposed Rules of the State Department of Public Safety Governing Prohibited Alterations or Modifications to Certain Vehicles

FROM:

Minnesota Hot Rod Association
and
Minnesota Automobile Accessory Dealers

The Minnesota Department of Public Safety Administration's Proposed Regulations Prohibiting Alterations or Modifications to Certain Vehicles are objectionable to the custom-automobile industry and hobby-car enthusiasts on the following bases:

1. As drafted, the Regulations are vague, ambiguous, and unduly discriminatory toward the custom-car industry and hobby-car owner-enthusiasts. In particular, definitions of "Alter" (SafAd 167(a)), "Modify" (SafAd 167(d)), and "Specially Constructed Vehicles" (SafAd 167 (f)), are, in the instance of "Alter" and "Modify" so broad as to be unenforceable and incapable of logical interpretation, while the definition of "Specially Constructed Vehicles" is so limited and restrictive as to include what is in fact a specially constructed vehicle within the definition of "vehicle".

2. The purpose of the regulations, according to SafAd 166(a) to establish which alterations or modifications to motor vehicles, passenger cars, and station wagons, of the road clearance, center of gravity, braking and steering systems, are prohibited.

   (a) The defined purpose is too limited in that the major purpose of the regulations should be to establish what alterations or modifications to a vehicle should be prohibited for safety reasons. Alterations or modifications which only "affect" the center of gravity, road clearance, or the performance of the braking or steering systems, should not necessarily be prohibited.

   (b) Prohibited alterations or modifications should include only those alterations or modifications which materially interfere, inhibit, or impair the ability of the vehicle to function or be operated in a manner consistent with the performance standards or requirements of the vehicle as originally manufactured, or performance standards or requirements promulgated by regulatory agencies for specially constructed vehicles.

   (c) There are innumerable common place modifications or alterations (as the terms are defined to vehicles which "affect" the performance of the braking or steering systems, center of gravity, or road clearance, but do not materially detract from or delimit the performance capabilities of the vehicle. It is therefore imperative that the definitions of "alter" or "modify", or the defined purpose of the regulations be amended to clarify the intent of the Legislature and the Department in promulgating such regulations.

3. Rather than concentrating the thrust of the regulations upon "prohibited alterations or modifications", the thrust of the regulations should be directed at vehicle equipment requirements and performance standards; a comprehensive set of vehicle equipment standards.

   (a) As currently defined in the proposed regulations, there are an infinite number of alterations or modifications which may "affect" the performance of the braking or steering systems, center of gravity, or road clearance.

   (b) Granted, the current prohibited alterations or modifications are limited, albeit ambiguously and vaguely, by these regulations. However, these regulations are undoubtedly the forerunners of a series of more comprehensive regulations if experience is to serve as a guide. The Federal Government, through the Department of Transportation, amongst other agencies, has mandated that states adopt comprehensive vehicle equipment inspection standards or face sanctions.

   (c) Assuming the likelihood of additional regulations and, in any event, some judicial interpretations and construction of existing regulations, it is more prudent to deal with and administer regulations defined in as specific a manner as possible; regulations subject to a finite and hopefully minimal number of interpretations. In other words, Minnesota's regulations should be modeled after those of other states, such as California, who have adopted vehicle inspection standards and equipment standards as oppossed to attempting to define prohibited alterations and modifications. Vehicle inspection standards and equipment standards, although appearing to be unwieldy administratively cumbersome initially, represent the only effective method of implementing the Department goal of increasing safety. The potential number of alterations or modifications to a vehicle is infinite. Who is to define which alterations or modifications are unsafe? It is more reasonable to define what equipment and what standards are "safe" and require vehicles to meet the criteria.

With these objectives and objections in mind, we would recommend that the following amendments to the regulations be made:

1. With respect to the definitions of "alter" and "modify" as provided for in SafAd 167(a) and SafAd 167(d) respectively, we would request consideration of one of the following two alternatives:

(a) Amending definitions of "alter" and "modify" to remove the text of "affecting" only, and provide for prohibition of alterations or modifications which materially interfere, inhibit, or impair the ability of the vehicle to function or be operated in a manner consistent with the performance standards or requirement of the vehicle as originally manufactured, or performance standards or requirements promulgated by regulatory authorities for vehicles.

(b) Alternatively, amend the regulations to eliminate the need for definitions of alter and modify altogether. This approach is the most logical and reasonable given the validity of the objections enumerated hereinbefore and does not have the subjectivity of alternative (a) above. The proposed regulations accommodate this amendment very efficiently; much of the vagueness and ambiguity is eliminated. For example, SafAd 169 would be amended as follows:

"SafAd 169 ROAD CLEARANCE, CENTER OF GRAVITY"

(a) "No part of a vehicle, other than the tires or mud flaps, may be closer to the ground than the lowest point of the wheel rim.

(b) The front or rear of the body of a vehicle may not be raised more than two (2) inches from its distance to the ground as manufactured, within the limits required by Minnesota Statutes 1974, Section 169.73, Subdivision 2.

(c) 1. A vehicle's brake hoses and fittings must accommodate maximum vehicle jounce and rebound.

2. A vehicle's structural parts may not be bent or damaged, and stabilizer bars, shock absorber mountings, shackles, U-bolts and radius rods must be securely attached.

3. Spacers may not be used to extend springs except to return spring length to that as manufactured."

Similarly, SafAd 170 and 171 would read as follows:

SafAd 170 BRAKING SYSTEM.

(a) Vehicle braking system must meet or exceed brake performance requirements of Minnesota Statutes 1974, Section 169.67.

(b) Brake system parts used shall not be deformed, cracked, broken, misaligned, binding or show severe wear.

(c) Vacuum hoses used in brake power units shall not be collapsed, abraded, broken, improperly mounted or audibly leaking.

(d) Replacement brake lining must not have a normal friction coefficient below that of Class Code E (not over 0.35) or a hot coefficient below that of Class Code D (not over 0.25) as identified in the Vehicle Equipment Safety Commission Regulation V-3.

SafAd 171 STEERING SYSTEM.

(a) The diameter of a vehicle steering wheel may not be less than twelve (12) inches.

(b) Lash or free play in the steering system may not exceed values shown in Table 1.

(c) Free play in the steering linkage, measured at a front tire tread, may not exceed one-quarter of an inch.

(d) There shall be no restriction of free travel of a front wheel in either direction from that as manufactured.

2. In SafAd 167 Definition, add the following: "Manufacturer"

"Manufacturer: Every fabricator of a vehicle assembled in its entirety as a complete product for use of public roadways."

3. Amend the definition of SafAd 167 (f), "Specially Constructed Vehicle" by deleting the existing definition and inserting the "Special Vehicle" definition contained in Section 3.1 of the Second Draft of VESC Minimum Requirements for Construction and Equipment of Special Vehicles, a copy of which is attached to this Memorandum.

(a) A new definition of Specially Constructed Vehicles is required because as defined, Specially Constructed Vehicles would include only a very small category of vehicles (at least from the standpoint of the customized automobile industry). In effect, the only vehicle needing a definitional criteria of a Specially Constructed Vehicle would be a "home made" vehicle. Such home made vehicles exist, but account for only a minuscule percentage of the total number of customized or altered vehicles.

4. Adopt the Second Draft of VESC Minimum Requirements for Construction and Equipment of Special Vehicles in its entirety for application to and under SafAd 167(f) as redefined. A complete copy of the Second Draft (VESC 12) is attached.

   Adoption of the VESC 12 Standards as applied to Specially Constructed Vehicles, will provide the Department with a comprehensive set of standards already tested and evaluated in practice. It will provide the Department with a firm basis for drawing more logical, functional and meaningful distinctions, between a vehicle and a specially constructed vehicle. Equally as important, it will subject the custom-automobile industry and hobby-car enthusiasts to a greater degree of regulations, but a degree of regulations consistent with that adopted in other states; regulations that the industry and enthusiasts are conversant with and feel represent liveable constraint while effectuating increased modicum of safety.

If there are any questions or comments concerning the proposed amendments to the regulations discussed herein above, please direct any comments or inquiries to myself or Robert C. Illingworth at 6750 France Avenue South, Suite 290, Minneapolis, Minnesota 55435, 612-927-4493.

Respectfully submitted,

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Vehicle Equipment Safety Commission

Second Draft of Regulation VESC
February 28 - March 1, 1974
MINIMUM REQUIREMENTS FOR
CONSTRUCTION AND EQUIPMENT
OF SPECIAL VEHICLES

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SECOND DRAFT
VESC MINIMUM REQUIREMENTS
FOR
CONSTRUCTION AND EQUIPMENT
OF SPECIAL VEHICLES

GENERAL

1. PURPOSE:

1.1 To establish performance and equipment standards for the manufacture of special vehicles, or the assembly and construction of such vehicles from new or used parts, or kits, or the alteration of a vehicle which places it in the category of a special vehicle, whereby compliance with this standard would reduce to the greatest extent possible the danger of death and injury to the operators and passengers of the vehicles subject to the provision of this standard, and to other users sharing the public highways with said vehicles.

1.2 The standard will provide minimum performance requirements that are technically feasible and based on sound engineering, that will achieve mechanical integrity and operational safety, and that will provide state administrators with a guide for registration eligibility and in-use conformity for vehicles in this category.

2. SCOPE:

2.1 This standard sets forth performance and equipment requirements necessary for the safe operation of special vehicles upon the public roadways. Such vehicles constructed or modified after the effective date of this standard shall comply with all provisions unless specifically excepted.

3. DEFINITIONS:

3.1 Special Vehicles* — Those passenger vehicles and light trucks with an unladen weight of 6,000 pounds or less equipped with two or more axles having at least two wheels per axle, which have a structural or component configuration other than that established by a recognized manufacturer, and which are intended for use on public highways. Such vehicles shall include, but not be limited to the following types.:

Type I — those vehicles which are restored to their original body configuration and contain changed steering, brake, power train, or suspension systems.

Type II — those vehicles materially changed from the recognized vehicle manufacturer's original configuration, including changes to the body chassis or engine.

Type III — those vehicles custom built with fabricated parts, or parts taken from existing vehicles.

* An antique vehicle or a vehicle restored to the original configuration and specifications of a recognized manufacturer is not considered to be a "special" -ehicle and is not covered by this standard, since most states have regulations for the antique vehicle category.

3.2 Recognized Manufacturer — a manufacturer of motor vehicles intended for use on the public roadways and tor distribution and sale in interstate commerce.

3.3 Manufacturer — every fabricator of a special vehicle assembled in its entirety as a complete product for use on the public roadways.

4. EXCEPTIONS:

4.1 Every jurisdiction may grant exceptions from the requirements of this standard or permit the use of other equipment or devices, but only when it is clearly evident that any variation is equivalent to original standards and not a compromise of highway safety.

5. MANUFACTURER'S CERTIFICATION:

5.1 The manufacturer of a special vehicle (Types I, II, III) shall provide a certification of fact that the vehicle is designed and manufactured for use on the public roadway and complies with the performance and equipment requirements of this standard.

BODY REQUIREMENTS

6. DEFROSTER AND DEFOGGING DEVICE:

6.1 Every closed special vehicle shall be equipped with a device capable of defogging or defrosting the windshield area.

7. DOOR LATCHES:

7.1 Every special vehicle that is equipped with doors leading directly into a compartment that contains one or more seating accommodations shall be equipped with door latches.

8. EQUIPMENT:

8.1 Those items of equipment originally required by a Federal Motor Vehicle Safety Standard shall remain on all special vehicles covered by this standard and these items of equipment shall be in operable condition.

9. FLOOR PAN:

9.1 Every special vehicle shall be equipped with a floor pan under the entire passenger-carrying compartment. The floor pan shall support the weight of the number of occupants that the vehicle is designed to carry. The floor pan shall be so constructed that it prevents the entry of exhaust fumes.

10. GLAZING:

10.1 Windshields — Every special vehicle shall be equipped with a windshield that complies with the provisions appearing in the current ANSI Z 26.1.* The windshield shall be in such a position that it affords continuous horizontal frontal protection to the driver and front seat occupants. The minimum vertical height of the unobstructed windshield glass shall be 6 inches, or as originally equipped by a recognized manufacturer.

10.2 Side and Rear Glass — These items are not required, but if they are present they must comply with the provisions of ANSI Z 26.1,* or as originally equipped by a recognized manufacturer.

*American Standards Institute Z 26.1 for Safety Glazing Materials for Glazing Motor Vehicles Operating on Land Highways.

11. HOOD LATCHES:

11.1 A front opening hood shall be equipped with a safety hood latch system.

12. INSTRUMENTATION AND CONTROLS:

12.1 Speedometer — Every special vehicle shall be equipped with an operating speedometer.

12.2 Odometer — Every special vehicle shall be equipped with an operating odometer.

12.3 Steering Wheel — The steering wheel shall have an outside diameter of not less than 13 inches, and shall be circular in design.

13. REAR VIEW MIRROR:

13.1 Every special vehicle shall be equipped with two rear view mirrors. One shall be mounted on the inside of the vehicle in such a position that it affords the driver a clear view to the rear. The other shall be mounted on the outside of the vehicle on the driver's side in such a position that it affords the driver a clear view to the rear. When an inside mirror is not feasible because it would not give a clear view to the rear, a right-hand outside mirror of equal surface area shall be required. The mirror mounting shall provide a stable support for the mirror, and shall provide for mirror -djustment by teetering in both horizontal and vertical directions. Each mirror shall have a minimum of 7 square inches of reflective surface.

14. SEAT BELTS:

14.1 Every special vehicle shall be equipped with a type I seat belt, in compliance with Federal Motor Vehicle Safety Standard 209, for the driver.

SEATING:

15.1 All bench type and individual seats in special vehicles shall be attached to structural or body parts that seat and seat track assemblies remain firmly attached to the vehicle, and permanent material deformation of seat structure, rails, fasteners, body and vehicle structure does not occur when a longitudinal horizontal force of 1200 lbs. is applied to the seat width center at a location one-third of the vertical distance from the rearmost floor fasteners of the seat track, or seat to floor attachment (whichever is lower), and the top of the seat back. Such force shall be applied separately at the specified location in both a forward and rearward direction. The force may be applied through a loading plate no higher than 6 inches to reduce localized force concentration on the seat material.

16. WINDSHIELD WIPERS:

16.1 Every special vehicle shall be equipped with two windshield wipers that are mechanically operated (electric-vacuum), unless the vehicle, constructed by a recognized manufacturer, was originally equipped with one windshield wiper.

CHASSIS REQUIREMENTS

17. ACCELERATOR CONTROL SYSTEMS:

17.1 Every special vehicle shall be equipped with an accelerator control system that returns the vehicle's throttle to an idle position when the driver removes the actuating force from the accelerator control unless overriden by speed control system. The accelerator control shall be of a voot-operated design unless equipped for a handicapped person.

18. BRAKES:

18.1 Service Brakes — Every special vehicle shall be equipped with hydraulic brakes acting on all wheels. The service brakes must meet the performance requirements of Tables 3 and 4, "Required Service Brake Performance," American National Standard D7.1-1973. *(See accompanying tables)*

18.2 Parking Brake — Every special vehicle shall be equipped with parking brakes adequate to hold the vehicle on any grade on which it is operated, under all conditions of loading, on a surface free from snow, ice or loose material. The parking brakes shall be capable of being applied in conformance with the foregoing requirements by the driver's muscular effort or by spring action or by equivalent means. Their operation may be assisted by the service brakes or other source of power provided that failure of the service brake actuation system or other power assisting mechanism will not prevent the parking brakes from being applied in conformance with the foregoing requirements. The parking brakes shall be so designed that when once applied they shall remain applied with the required effectiveness despite exhaustion of any source of energy or leakage of any kind. The same brake drums, brake shoes and lining assemblies, brake shoe anchors and mechanical brake shoe actuation mechanism normally associated with the wheel brake assemblies may be used for both the service brakes and the parking brakes. If the means of applying the parking brakes and the service brakes are connected in any way, they shall be so constructed that failure of any one part shall not leave the vehicle without operative brakes.

19. BUMPERS:

19.1 Every special vehicle shall be equipped with a bumper both on the front and rear of the vehicle. A horizontal load-bearing member must provide protection 20 inches on each side of the vehicle's centerline, to effectively engage the impact protection system (such as bumper) of a corresponding motor vehicle. A bumper originally installed on the vehicle shall be the horizontal load-bearing member, attached to the vehicle frame, as originally installed. Where a bumper, other than the one originally furnished with the vehicle, is used it shall be *at least* 40 inches wide by 4.5 inches in vertical height and centered on the vehicle's centerline, and attached to the vehicle frame to effectively transfer impact when engaged. Where the bumper vertical height exceeds 4.5 inches, the measurement to determine compliance with evaluation requirements (14 to 22 inches) may be made plus or minus 2.25 inches on

the horizontal centerline of the points of attachment of the bumper to the vertical frame.

20. EXHAUST SYSTEM:

20.1 Every special vehicle shall be equipped with an exhaust system that is free of leaks and which includes the exhaust manifolds (including headers), the piping leading from the flange of the exhaust manifold(s) to and including a muffler(s), and the tail piping.

20.2 Exhaust systems on property-carrying vehicles shall discharge the exhaust fumes to the rear of that part of the vehicle designed for, and normally used for, carrying the driver and passengers.

20.3 Exhaust systems on passenger vehicles shall discharge the exhaust fumes at some point to the rear of the rear wheels and to the extreme edge of the vehicle body.

20.4 No part of the exhaust system shall pass through any area of the vehilcle that is used as a passenger-carrying compartment.

21. FENDERS:

21.1 All wheels of every special vehicle shall be equipped with fenders designed to cover the entire tire tread width that comes in contact with the road surface. Coverage of the tire tread circumference shall be from at least 15 degrees in front to at least 75 degrees to the rear of the vertical center line of each wheel. At no time shall the tire come in contact with the body of chassis of the vehicle.

22. FUEL SYSTEM:

22.1 Every special vehicle shall have all fuel system components, such as tank, tubing, hoses, clamps, etc., securely fastened to the vehicle so as not to interfere with the vehicle operation, and shall be leak proof.

22.2 Fuel lines shall be positioned so as not to be in contact with high temperature surfaces or moving components.

23. STEERING AND SUSPENSION:

23.1 A special vehicle shall have no metal part extending below the wheel rims in their lowest position.

23.2 A special vehicle shall have a minimum wheel base of eighty (80) inches, except in those instances where the vehicle is constructed by a recognized manufacturer.

23.3 The steering system shall remain unrestrained when turned from lock to lock.

23.4 Special vehicles shall not have a rigid suspension system but shall have a damping device at each wheel location.

24. TIRES:

24.1 The tires on special vehicles shall comply with current Federal Motor Vehicle Safety Standards and/or VEXC-8, and those tires marked or labeled, "not for highway use," "for farm use only," "for racing purposes only," or any similar legends are prohibited. Front tires must measure 60% of the tread width of the rear tires, except under emergency conditions. All tires shall be of a type designed for passenger car use and comply with FMVSS 109A and/or V-1.

ELECTRICAL SYSTEM REQUIREMENTS

25. DIMMER SWITCH:

25.1 The head lamp circuit shall be equipped with a driver-controlled switch used to select the high or low beam.

26. HEAD LAMP SWITCH:

26.1 The head lamp switch must activate the head lamps, tail lamps, license plate lamp, parking lamps, and the speedometer illumination lamp(s).

27. HEAD LAMP SYSTEM:

27.1 2 white 7 inch type 2 head lamp units, or 2 white 5-3/4 inch type 1 head lamp units and 2 white 5-3/4 inch type 2 head lamp units, in compliance with SAE Standards J580a, J579a, and J566. The type 1 head lamps shall be mounted at the same height, 1 on each side of the vertical centerline. Type 2 head lamps shall be mounted at the same height, 1 on each side of the vertical centerline and as far apart as practical. The head lamps shall be mounted not less than 24 inches nor more than 54 inches above the road surface when measured to the head lamp center. Lamp subbody(ies) shall be constructed so as to afford proper aiming of the head lamp(s).

28. HIGH BEAM INDICATOR:

28.1 An indicator shall be provided to show when the upper beam of the head lamp system is on. The indicator shall consist of a light other than white plainly visible to drivers of all heights under normal driving conditions, when headlights are required.

29. HORN:

29.1 Every special vehicle shall be equipped with a horn that is electrically operated and that will emit a sound audible under normal conditions from a distance of not less than 200 feet. The switch used to actuate the horn shall be easily accessible to the driver when operating the vehicle.

*30. LICENSE PLATE LAMP:

30.1 At least 1 white lamp shall be provided at the rear license plate to illuminate the plate from the top or sides.

*31. PARKING LAMPS:

31.1 2 amber or white in compliance with SAE J222 shall be mounted on the front, 1 on each side of the vertical centerline, at the same height, and as far apart as practical. The parking lamps shall be mounted not less than 15 inches, nor more than 72 inches above the roadway.

*32. REFLEX REFLECTORS:

32.1 2 red class A reflectors in compliance with SAE J594d shall be mounted on the rear symmetrically disposed about the vertical centerline. The reflex reflectors shall be mounted not less than 15 inches, nor more than 60 inches, above the roadway.

*33. STOP LAMPS:

33.1 2 red in compliance with SAE Standard J586b shall be mounted on the rear, 1 on each side of the vertical centerline, at the same height, and as far apart as practical. The stop lamps shall be mounted not less than 15 inches, nor more than 72 inches, above the roadway.

*34. TAIL LAMP SYSTEM:

34.1 2 red lamps in compliance with SAE Standard J585c shall be mounted on the rear, 1 on each side of the vertical centerline, at the same height, and as far apart as practical. The tail lamps shall be mounted not less than 15 inches, nor more than 72 inches, above the roadway.

35. TURN SIGNAL INDICATOR:

35.1 If any signal lamp is not readily visible to the driver, there shall be an illuminated indicator to give him a clear and unmistakable indication that the turn signal system is turned on. The illuminated indicator shall consist of one or more bright lights flashing at the same frequency as the signal lamps and it shall emit a light other than white.

*36. TURN SIGNAL LAMPS:

36.1 2 class A red or amber and 2 class A amber in compliance with SAE J588d shall be mounted as follows: at or near the front, 1 amber on each side of the vertical centerline, at the same height, and as far apart as practical; on the rear, 1 red or amber on each side of the vertical centerline, at the same height, and as far apart as practical. The turn signals shall be mounted not less than 15 inches, nor more than 83 inches, above the roadway.

37. TURN SIGNAL SWITCH:

37.1 Every special vehicle shall be equipped with a switch controlled by the operator of the vehicle that shall cause the turn signal lamps to function. The switch shall be self-cancelling and capable of cancellation by a manually-operated control.

*Combination lighting devices are acceptable.

Table 3
Required Service Brake Performance – Passenger Car
(Uniform Vehicle Code)

Classification of Vehicle	Braking Force as a Percentage of Gross Vehicle or Combination Weight	Deceleration in Feet per Second per Second	Brake System Application and Braking Distance in Feet from an Initial Speed of 20 mph
Col 1	Col 2	Col 3	Col 4
A. Passenger vehicles with a seating capacity of ten people or less, including driver	52.8	17	25

NOTES:
(1) This table conforms with the Uniform Vehicle Code (1972 revision) of NCUTLO (National Committee on Uniform Traffic Laws and Ordinances).
(2) For a detailed explanation of this table, see notes to Table 4.

Table 4
Required Service Brake Performance – Trucks, Buses, and Combinations
(Uniform Vehicle Code)

Classification of Vehicles	Braking Force as a Percentage of Gross Vehicle or Combination Weight	Deceleration in Feet per Second per Second	Brake System Application and Braking Distance in Feet from an Initial Speed of 20 mph
Col 1	Col 2	Col 3	Col 4
B. Single-unit vehicles with a manufacturer's gross vehicle weight rating of 10 000 pounds or less	43.5	14	30
C-1. Single-unit vehicles with a manufacturer's gross weight rating of more than 10 000 pounds	43.5	14	40
C-2. Combination of a two-axle towing vehicle and a trailer with a gross trailer weight of 3000 pounds or less	43.5	14	40
C-3. Buses, regardless of the number of axles, not having a manufacturer's gross weight rating	43.5	14	40
C-4. All combinations of vehicles in driveaway-towaway operations	43.5	14	40
D. All other vehicles and combinations of vehicles	43.5	14	50

NOTES:
(1) This table conforms with the Uniform Vehicle Code (1972 revision) of NCUTLO (National Committee on Uniform Traffic Laws and Ordinances.
(2) There is a definite mathematical relationship between the figures in Columns 2 and 3. If the decelerations set forth in Column 3 are divided by 32.2 feet per second per second, the Column 2 figures will be obtained. Column 2 is included in the tabulation because certain brake testing devices utilize this factor.
(3) The decelerations as in Column 3 are an indication of the effectiveness of the basic brakes, and as measured in practical brake testing are the maximum braking decelerations attained at some time during the stop.
This deceleration as measured in brake tests cannot be used to compute the values in Column 4 because it is not sustained at the same rate over the entire period of the stop. The deceleration increases from zero to a maximum during a period of brake system application and brake force buildup. Also, other factors may cause the deceleration to decrease after reaching a maximum. The added distance which results because a maximum deceleration is not sustained is included in the figures in Column 4 but is not indicated by the usual brake testing devices for checking deceleration.
(4) The distances in Column 4 and the decelerations in Column 3 are not directly related. "Brake system application and braking distance in feet" (Column 4) is a definite measure of the overall effectiveness of the braking system, being the distance traveled between the point at which the driver starts to move the braking controls and the point at which the vehicle comes to rest. It includes distance traveled while the brakes are being applied and the distance traveled while the brakes are retarding the vehicle.
(5) The distance traveled during the period of brake system application and brake force buildup varies with vehicle type, being negligible for many passenger cars and greatest for combinations of commercial vehicles. This fact accounts for the variation from 25 to 50 feet in the numerical values in Column 4 for the various classes of vehicles shown in Tables 3 and 4.
(6) As of July 1, 1972, all vehicles subject to the regulations of the DOT Bureau of Motor Carrier Safety are subject to the stopping requirements in Table 5, except that the column pertaining to emergency brake systems is effective July 1, 1973.

StreetScene

STATE OF MINNESOTA

BEFORE EDWARD G. NOVAK

COUNTY OF RAMSEY

COMMISSIONER OF PUBLIC SAFETY

In the matter of the Proposed Adoption of Rules of the State Department of Public Safety Governing Prohibited Alterations or Modifications to Certain Vehicles.

FINDINGS OF FACT

The above-entitled matter came on for hearing before the Commissioner of Public Safety of the State of Minnesota on the 23rd day of December, 1975, at 1:00 P.M. in Room 81 State Office Building, St. Paul, Minnesota, after proper notice required by M.S. 1974, Section 15.0412 was served upon all persons, associations and other interested groups registered with the Secretary of State for that purpose.

After affording interested persons an opportunity to present written and oral data, statement and arguments, having heard all of the testimony, having considered all of the evidence adduced and upon the records, files and proceedings herein, I find the following:

1. The Commissioner of Public Safety is specifically authorized, pursuant to Minnesota Statutes Section 169.47, subd. 2 (1974), to adopt rules prohibiting alterations or modifications to vehicles which affect road clearance, center of gravity, braking or steering.

2. The purpose of these rules is to establish minimum safety standards for vehicles regarding alterations and modifications which would affect road clearance, center of gravity, braking and steering.

3. These rules are needed in an attempt to reduce the number and severity of vehicle crashes which result from vehicle malfunction and dysfunction due to modifications and alterations made. Modifications and/or alterations can adversely affect vehicle handling characteristics or otherwise create conditions which compromise public safety.

4. Modification of vehicles which affect braking, steering, road clearance, center of gravity and gasoline leakage can unnecessarily contribute to highway injuries and fatalities. Because of this fact, certain states, namely California, Pennsylvania, and New York in particular, have statutary limitations on vehicle modification. Also, the Federal Government has purposely specified no permissible gasoline leakage on new vehicles tested for front and rear end impacts.

5. Amendments to the proposed rules following the public hearing and review of exhibits and testimony are identified by the underlining of new language and striking of deleted language on the filed document labeled DRAFT ADOPTED RULES. An explanation of these changes follows:

   a. The change in definition of the terms "alter" and "modified" in SafAd 167 was deemed advisable to eliminate unnecessary language by striking the words "...in a manner affecting road clearance, center of gravity, or the performance of the braking or steering system". Since Section 169.47, Subdivision 2 of the Minnesota Statutes confines application of the rules to those four categories, there seems to be no pressing need to include the stricken terminology in the definitions.

   b. SafAd 169(b) was amended to permit the front or rear of the body to be raised three inches from the ground following testimony from J. R. Kelley (Exhibit P) to permit the use of overload devices with rear spring situations.

   c. SafAd 169(c)(3) was amended to permit the use of spacers to return spring length to that as manufactured in accordance with testimony contained in Exhibits (J) and (P).

   d. SafAd 170(d) was amended to fully identify the coefficient of friction limits for brake lining and the source of those standards, Vehicle Equipment Safety Commission Regulation V-3. This change was in accordance with the suggestion of E. W. Drislane, Executive Director of the Friction Materials Institute (Exhibit L).

   e. SafAd 171(b) was amended to require the "lash or free play" to be determined with the engine running on vehicles equipped with power steering as per Exhibit (P) from J. R. Kelley. Having the engine running while determining lash or free play on a vehicle equipped with power steering is a standard motor vehicle inspection requirement and the rules should specify accordingly.

f. SafAd 171(c) relating to free play in the steering linkage was deemed unnecessary in that excessive free play in the steering linkage would be controlled by the steering system lash requirement of SafAd 171(b).

STATE OF MINNESOTA
DEPARTMENT OF PUBLIC SAFETY

Edward R Novak
COMMISSIONER OF PUBLIC SAFETY

STATE OF MINNESOTA

COUNTY OF RAMSEY

BEFORE EDWARD G. NOVAK

COMMISSIONER OF PUBLIC SAFETY

In the matter of the Proposed Adoption of Rules of the State Department of Public Safety Governing Prohibited Alterations or Modifications to Certain Vehicles.

ORDER ADOPTING RULES

The above-entitled matter came on for hearing before the Commissioner of Public Safety of the State of Minnesota on the 23rd day of December, 1975, at 1:00 P.M. in Room 81 State Office Building, St. Paul, Minnesota, after proper notice required by M.S. 1974, Section 15.0412 was served upon all persons, associations and other interested groups registered with the Secretary of State for that purpose.

After affording interested persons an opportunity to present written and oral data, statements and arguments, having heard all of the testimony, having considered all of the evidence adduced and upon the records, files and proceedings herein, and applicable statutory standards or criteria, and having confirmed the need for the above captioned rules;

NOW, THEREFORE, IT IS ORDERED that these rules identified as Chapter Nineteen: Prohibited Alterations or Modifications to Certain Vehicles, Safety Administration 166-180, are adopted this 21 day of April, 1977, pursuant to authority vested in me by M.S. 1974, Section 299A.01, Subdivision 6.

STATE OF MINNESOTA
DEPARTMENT OF PUBLIC SAFETY

Edward G Novak

COMMISSIONER OF PUBLIC SAFETY