PERFORMANCE AUDIT

DEPARTMENT OF TRANSPORTATION

MOTOR VEHICLE DIVISION – WEIGHT ENFORCEMENT

Report to the Arizona Legislature
By the Auditor General
December 1986
86-9

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December 12, 1986

Members of the Arizona Legislature
The Honorable Bruce Babbitt, Governor
Charles L. Miller, Director
Department of Transportation

Transmitted herewith is a report of the Auditor General, A Performance Audit of the Department of Transportation, Motor Vehicle Division - Weight Enforcement. This report is in response to the July 26, 1985 resolution of the Joint Legislative Budget Committee.

The report addresses the need to strengthen enforcement of commercial vehicle weight limits. Bypassing of ports of entry, together with insufficient enforcement within the interior of the State, inoperative scales and widespread failure of the justice courts to impose minimum statutory penalties, undermine the State's weight enforcement program. We recommend that these deficiencies be addressed and that greater enforcement efforts be directed at trucking companies that repeatedly violate weight limits.

My staff and I will be pleased to discuss or clarify items in the report.

Respectfully submitted,

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SUMMARY

The Office of the Auditor General has conducted a performance audit of the Arizona Department of Transportation (ADOT), Motor Vehicle Division (MVD), weight enforcement function in response to a July 26, 1985, resolution of the Joint Legislative Oversight Committee. This performance audit is one in a series of audits on ADOT, and was conducted as part of the Sunset Review set forth in Arizona Revised Statutes (A.R.S.) §§41-2351 through 41-2379.

Overweight trucks accelerate pavement deterioration and increase stress on bridge structures. This deterioration increases exponentially as truck weight increases. For example, a 100,000 pound truck does three times as much damage as an 80,000 pound truck. In order to mitigate the damage from overweight trucks, MVD has a weight enforcement program. This weight enforcement operation is comprised of 18 fixed ports of entry on the State's borders and several mobile scale crews that operate in the interior of the State.

Bypassing Of Ports Of Entry And Limited Enforcement Against Intrastate Traffic Weakens Weight Enforcement (see pages 7 through 17)

Bypassing of ports of entry and limited use of mobile crews weakens MVD's enforcement effort. Although 33 paved roads lead into Arizona from surrounding states and Mexico, only 13 have ports of entry with operating scales. Although there is limited data on the number of trucks bypassing the ports, studies have shown that from 10 percent to 33 percent of trucks on Arizona highways are exceeding weight limits. MVD is preparing to implement a plan to prevent bypassing of ports; however, this plan will be limited to only the eastern border and portions of the northern border of the State.

Better enforcement is also necessary in the interior of the State to monitor those truckers who operate within Arizona's borders. For example, trucks carrying concrete, garbage, and sand and gravel frequently violate

weight limits but travel only short distances and do not pass through ports. MVD has placed a low priority on intrastate weight enforcement activities. Officers assigned to interior based mobile crews spend less than 50 percent of their time on weight enforcement.

Inoperative Scales Allow Many Trucks To Pass Through Ports Of Entry Without Being Weighed (see pages 19 through 25)

Weight enforcement is further weakened because port scales are frequently inoperative. Because of frequent scale malfunctions, more than one-quarter million trucks, 13 percent of the trucks that could have been weighed in fiscal year 1984-85, were not weighed. One major cause of scale downtime is that port scales were not designed for the high traffic volumes at the ports. Another problem is that some of MVD's scale installations make maintenance and repair very difficult and costly. A 1985 ADOT report indicated that $600,000 was needed to repair scales with significant maintenance problems.

MVD should consider purchasing heavier scales designed for high traffic volumes. Such scales cost approximately 10 to 15 percent more than the scales MVD has purchased in the past.

Overloaded Axles, Which Are Damaging And Occur Frequently, Cannot Be Cited Under Existing Law (see pages 27 through 30)

Although overweight axles are a major cause of pavement damage, effective enforcement action cannot be taken in most cases. Truck related pavement damage is primarily caused by the weight on each of a truck's axles. Therefore, a truck with overloaded axles can cause damage even though its gross weight may be legal. However, current statutes require officers to allow shifting of a load when a vehicle is only over axle weight, not over gross limits. If the load is shifted to be within legal axle load limits, the driver cannot be cited. As a result, more than 90 percent of Arizona's weight enforcement violations between fiscal years 1982 and 1984 could not be cited.

The Legislature should consider modifying the statutes to allow citations for all overweight axle violations.

More Than One Third Of All Violators Are Not Assessed Minimum Statutory Fines (see pages 31 through 35)

The judicial system often fails to enforce minimum statutory penalties against weight violators. Many courts incorrectly believe they have the authority to lower or suspend fines. As a result, 38 percent of overweight violators receive fines less than the minimum fines specified in statutes. The average fine reduction is $750 for those fines that are reduced. This not only diminishes the deterrent effect of the penalties, but also translates into a revenue loss of approximately $600,000 per year.

MVD should monitor fines imposed by the courts to ensure that the weight fine schedule established in statutes is applied. Noncompliance should be reported to the Arizona Supreme Court in order to ensure future compliance.

Greater Enforcement Effort Should Be Directed At Trucking Companies (see pages 37 through 42)

Enforcement efforts should be directed at trucking companies as well as drivers. Although owners and companies may be responsible for overloads, they are currently not held accountable for weight violations committed with their trucks. Under existing statutes, courts are generally constrained to hold only the truck driver responsible for weight violations. This has provided sufficient enforcement problems that the City of Tempe enacted an ordinance that holds owners and drivers jointly liable for weight citation penalties.

Weight audits and civil penalties could also be used to direct enforcement action toward truck companies and owners. Audits of truck company weight records are an effective and efficient tool in identifying companies that repeatedly violate weight laws. Weight audits are successfully used by the state of Minnesota. After repeat violators are identified, civil suits can recover road damages they have caused. Texas and Minnesota have found that this action can be a very effective deterrent against intentional violations. For example, Texas collected more than $1.3

million in damages in a seven-month period and has experienced a 30 percent reduction in gross weight violations since its civil program began in late 1984. Minnesota attributes a 55 percent reduction in overweight trucks between fiscal years 1982-83 and 1984-85 to weight audits and civil penalties.

The Legislature should consider amending the statutes to permit courts to hold trucking companies or individuals who own or lease trucks jointly responsible with drivers for all weight violations. In addition, the Legislature should consider giving MVD the authority to conduct audits of trucking company weight records. MVD should consider bringing civil action against companies that repeatedly violate weight limits.

MVD Needs Better Information For Its Weight Enforcement Program (see pages 43 through 47)

MVD needs more and better data on weight citations and on the location and movement of overweight trucks. Information on trucking company name, time and location of violation, fine amount, and truck weight is not presently available. MVD needs this information to evaluate its effectiveness, to enhance enforcement efforts against repeat violators, and to monitor court adherence to statutory fines.

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INTRODUCTION AND BACKGROUND

The Office of the Auditor General has conducted a performance audit of the Arizona Department of Transportation in response to a July 26, 1985, resolution of the Joint Legislative Oversight Committee. This performance audit was conducted as part of the Sunset Review set forth in Arizona Revised Statutes (A.R.S.) §§41-2351 through 41-2379.

This is the second of several reports to be issued on the Arizona Department of Transportation (ADOT). The report focuses on the weight enforcement function within the Motor Vehicle Division (MVD) of the Department of Transportation.

Overweight Trucks Damage Roads

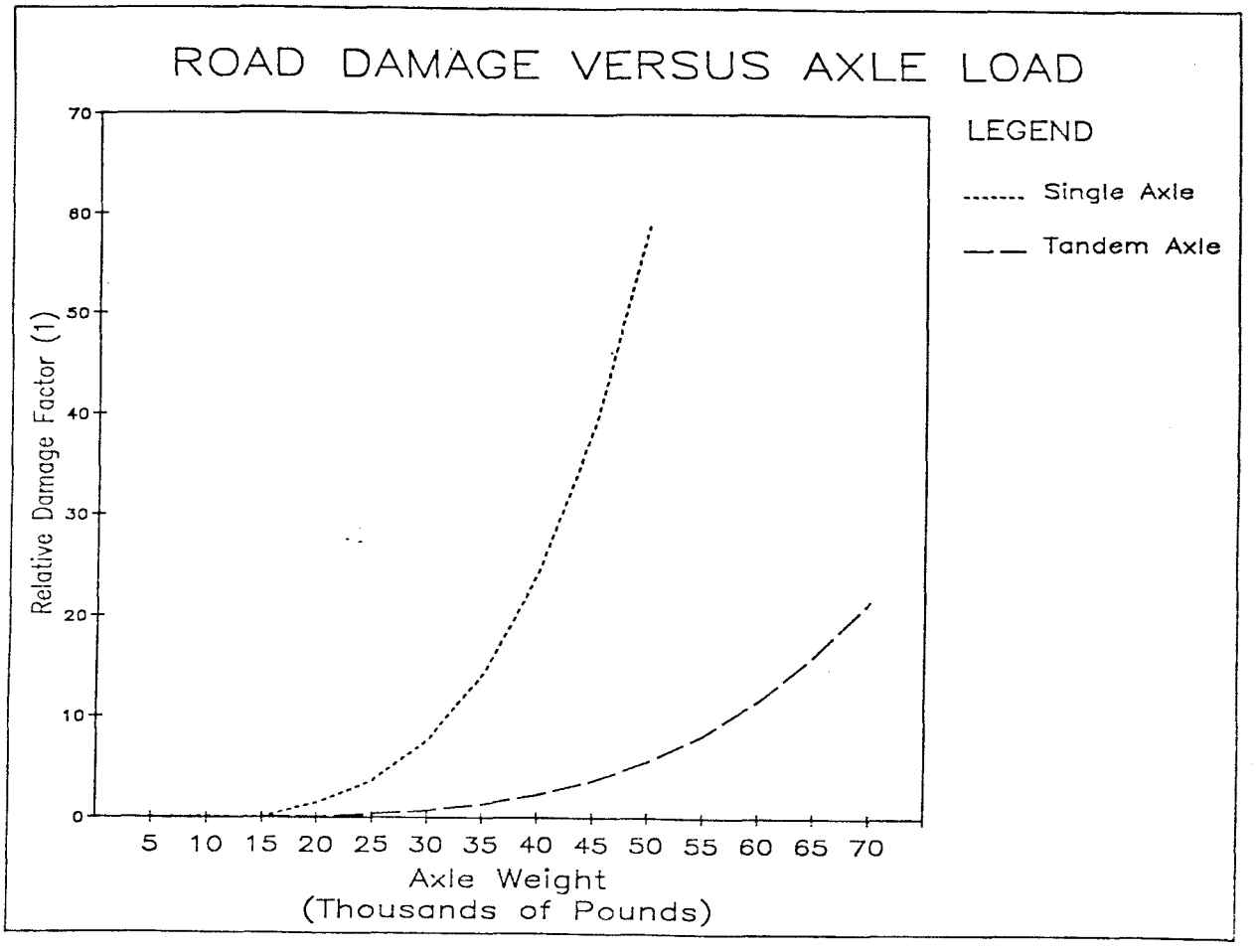
Overweight trucks accelerate pavement deterioration and increase maintenance costs. Overweight trucks exponentially increase damage to roads, thereby decreasing highway and bridge life. Although studies estimating damage costs done to roads by overweight trucks are few, available data suggest that costs are extensive. As the State embarks on a 20 year, $5 billion program to build new highways, protection of the State's investment in new and existing highways through the weight enforcement program becomes even more critical.

Overweight Trucks Multiply Highway Damage - Although the damage resulting from overweight trucks cannot be precisely quantified, engineers have shown that concentrating increasing amounts of weight on a single axle exponentially increases the damage to the road. An American Association of State Highway and Transportation Officials (AASHTO) road test conducted from 1958 to 1962 established the relationships between traffic loads and pavement deterioration.* For example, an axle weighing 26,000 pounds, which is 30 percent more weight than the legal single axle limit of 20,000 pounds, does 200 percent more damage. Similarly, trucks over the legal maximum gross limits do considerably more damage than do those within the

* Although the AASHTO report is 24 years old, the procedures and formulas developed are still the basis for current pavement design.

legal limits. For example, an approximately 25 percent increase in the gross load of a five-axle tractor trailer from the legal limit of 80,000 to 100,000 pounds increases pavement damage by 300 percent. Therefore, if all other factors remain constant, as axle weight increases the amount of pavement damage increases exponentially and the expected life of the pavement decreases. This results in the need for additional rehabilitation funds. Figure 1 illustrates the relationship of axle weight to pavement damage for both single and tandem axles.

FIGURE 1



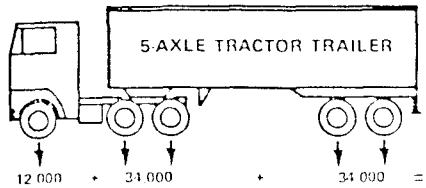
(1) Relative damage is based on an 18,000 pound single axle and a 32,500 pound tandem axle, each causing a damage factor of 1.0. The relative damage factor represents the number of 18,000 pound single axles that would have to pass over the road to cause equivalent damage.

Source: Prepared by Auditor General staff from information provided by ADOT Highways Division.

Even trucks within legal weight limits damage pavement considerably more than automobiles. It takes approximately 9,600 automobiles to damage the pavement to the same extent as one 80,000 pound tractor trailer. The equivalent damage caused by axle distribution of a five-axle, 80,000 pound tractor trailer is displayed in Figure 2.

FIGURE 2

COMPARISON OF DAMAGE CAUSED BY A 4,000 POUND AUTOMOBILE AND AN 80,000 POUND TRUCK



TRUCK AXLE WEIGHTS	12,000 POUNDS	+	34,000 POUNDS	+	34,000 POUNDS	=	80,000 POUNDS
EQUIVALENT NUMBER OF AUTOS	500 AUTOS	+	4,550 AUTOS	+	4,550 AUTOS	=	9,600 AUTOS

Source: Comptroller General of the United States, 1979. "Excessive Truck Weight: An Extensive Burden We Can No Longer Support." Report to the Congress of the United States. General Accounting Office, Washington, D.C., p. 23.

In addition to pavement deterioration, another important consideration is the stress placed on bridges by overloaded vehicles. Overloaded vehicles cause stress to bridge structures, decreasing useful life.

Overweight Trucks Increase Highway Costs - Although few studies have been done on damage costs due to overweight trucks, some cost estimates have been made. For example, in a 1983 report the U.S. Department of Transportation's Inspector General estimated the annual cost of deterioration to interstate highways to be in excess of $500 million. The Federal Highway Administration's December 1985 "Overweight Vehicles - Penalties & Permits, An Inventory Of State Practices" report states that this estimate is probably conservative, since the cost data were based on trucks weighed, which is not necessarily representative of trucks actually using the highways. No studies have been done in Arizona to estimate

deterioration costs due to overweight trucks.*

However, deterioration of Arizona roads due to overweight trucks is acknowledged. According to Highways Division engineers, they recognize general types of damage (rutting and grooves) caused by overweight trucks. For example, the following locations display general pavement damage caused by overweight trucks.

- the Durango and 19th Avenue intersection
- the pavement around the scales
- the freeway exit ramps
- U.S. Highway 666 between I-10 and U.S. Highway 70
- U.S. Highway 70 from Safford to Duncan

In addition, the Materials Section of the Highways Division estimated that premature deterioration of several highway sections built in 1979 cost more than $10 million to repair. These sections had design lives of ten years, but deteriorated and failed within two years. According to a pavement engineer, although this deterioration cannot be wholly attributed to overweight trucks, its premature and unique nature allows a clear link to be drawn to overweight trucks. In light of the State's current program to build more than $5 billion of highways over the next 20 years in Maricopa County alone, any similar failures could have enormous financial consequences.

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* An estimate of damage costs to Arizona roads can be calculated. A transportation expert from Austin, Texas, has performed such calculations for the state of Texas. An engineering firm, ARE Inc., has recently completed for the Highway Division of ADOT a study determining the effects of changes in truck gross weights, axle weight distribution, tire pressures, tire footprints and axle configuration on pavement performance. In addition, ARE related these effects to impacts on ADOT's pavement design procedures. This information with additional information on the conditions of various classes of Arizona roadways could be entered into an ARE developed computer program to estimate statewide damage costs due to overloaded trucks using Arizona roads.

Weight Enforcement Program

To protect the State highway system from damages due to overweight vehicles, MVD conducts a weight enforcement program. The MVD weight enforcement operation is comprised of 18 ports of entry and six interior based State mobile crews. The ports of entry are permanent stations at State borders. The ports of entry are currently used to prevent overweight trucks from coming into the State. MVD plans to enhance its port operations by keeping in- and outbound lanes at its major ports open 24 hours a day, seven days a week. Mobile crews currently monitor trucks traveling within the State. MVD also plans to add mobile crews to work around six of its smaller ports and to increase the number of interior mobile crews from six to nine.

Audit scope

Our audit of the Department of Transportation's Motor Vehicle Division was limited to the weight enforcement function within the Field Services Section. The report presents detailed findings in the following areas.

- Adequacy of mobile weight enforcement operations
- Problems with port of entry scales
- Limited enforcement against overweight axles
- Need to increase adherence to statutory fine structure
- Need to direct enforcement effort at trucking companies
- Need for an improved weight enforcement information system

Limited time was devoted to addressing the 12 statutory sunset factors. Sunset factors will be addressed on a Departmental basis at the completion of the series of ADOT audits.

This audit was conducted in accordance with generally accepted governmental auditing standards.

The Auditor General and staff express appreciation to the Director and staff of the Department of Transportation for their cooperation and assistance during the course of our audit.

FINDING I

BYPASSING OF PORTS OF ENTRY AND LIMITED ENFORCEMENT AGAINST INTRASTATE TRAFFIC WEAKENS WEIGHT ENFORCEMENT

The Arizona Department of Transportation (ADOT) Motor Vehicle Division's (MVD) mobile crew weight enforcement activity needs to be strengthened. The Division's port of entry weight enforcement needs enhancement to curb bypassing of the ports. In addition, MVD's interior mobile crews are not effectively utilized to deter violations by trucks just traveling in the interior of the State.

MVD's Port Of Entry Weight Enforcement Needs Enhancement

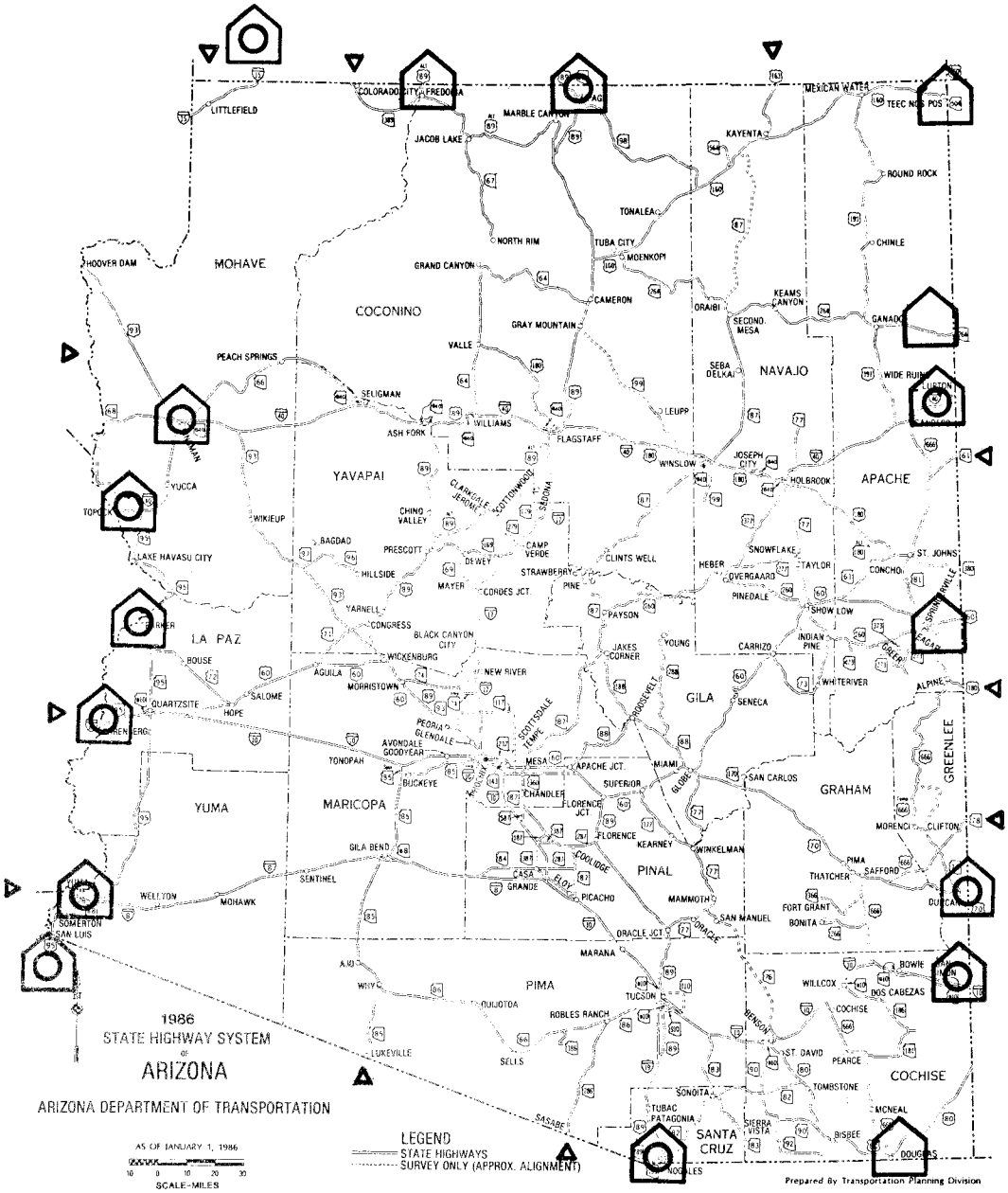
Because of the importance of weight enforcement, MVD's weight enforcement program at the ports of entry needs to be strengthened. Evidence indicates that overweight trucks bypass the ports of entry. Other states have controls to address port bypassing. Although MVD has developed a plan to curtail port bypassing, the plan will not address the problem on a statewide basis.

Fixed ports can be bypassed - MVD officials acknowledge that bypass routes exist. The full extent of bypassing is unknown, but two studies conducted to check compliance with motor carrier regulations found 6 to 14 percent of traffic bypassing ports. In addition, various studies show that overweight trucks are entering Arizona.

MVD and other ADOT personnel acknowledge that bypass routes exist. According to ADOT's 1985 "Vehicle Size and Weight Enforcement" report, 33 paved roads lead into Arizona from surrounding states and Mexico. Of the 33 roads, only 18 have ports. Further, only 13 of the ports have scales. Therefore, truckers with overloads are able to avoid roads with port scales. Figure 3 shows the location of MVD's ports of entry and some of the bypass routes.

FIGURE 3

PORTS OF ENTRY AND BYPASS ROUTE LOCATIONS



- Port of entry with scales (Note: the symbol in the Yuma area denotes two ports.

- Port of entry without scales

- Bypass route (Note: Locations are approximate because this map does not show all roads).

Source: Prepared by Auditor General staff from information provided by MVD.

Known bypass routes include:

- Westbound State highway 61 into the State to northbound U.S. Highway 666 to I-40. This route bypasses the 24-hour Sanders port.
- Westbound State Highway 264 past the Window Rock port, which does not have a scale and is not open 24 hours, then south bound on U.S. Highway 191. This route also bypasses the Sanders port.
- Westbound U.S. Highway 70 past the Duncan port when closed to U.S. Highway 666 southbound to I-10. This route bypasses the 24-hour San Simon port.
- Giss Parkway in Yuma. This route bypasses the 24-hour Yuma port.
- The frontage road behind the Yuma port. This route also bypasses the Yuma port.

ADOT conducted two studies addressing bypassing of ports to circumvent commercial vehicle registration, audit use fuel tax and motor carrier tax. These studies (the Northeast and Southwest Projects) were performed to assess the losses to the Highway User Revenue Fund due to motor carrier noncompliance.

The Northeast Project, conducted in November 1983, monitored truck traffic on five of the 13 routes in the area without ports.* 1,128 trucks or buses went through the five checkpoints. This represents 6 percent of the 20,110 trucks that went through the four ports in the area (Springerville, Teec Nos Pos, Sanders and San Simon) and the checkpoints during the same time.

The Southwest Project was conducted in Yuma County in April and May 1985. Six of eight checkpoint locations without ports were staffed 24 hours a day for nine days. 1,369 motor carriers went through these six sites. This represents 12 percent of the 11,021 trucks or buses that went through the three ports in the area (Ehrenberg, Parker and Yuma) and the checkpoints.

* This area encompassed Springerville to the south, Teec Nos Pos to the north, Kayenta to the west and the Arizona State line to the east.

Although these two projects indicate bypassing of ports, not all trucks that bypass are overweight. No studies have been conducted to detect overweight trucks bypassing ports, but evidence from other studies shows that overweight trucks travel into Arizona. The evidence of overweight trucks comes from various studies.

- Transportation Planning Division (TPD) found in its 1982 biennial count and weighing a sample of trucks that 13 percent of the trucks in the sample were over the State's weight limits.

- TPD's 1984 truck samples indicate that 13 percent were in violation of the State's weight laws.

- ADOT Productivity Resource Management System (PRMS) reported from the Southwest Project performed in 1985 that 31 percent of the trucks bypassing the Yuma port on westbound Giss Parkway were overweight.*

- In 1985 TPD performed two weigh-in-motion (WIM) studies. The data gathered on I-40 and I-10 indicate that more than one-third of the trucks weighed were over the maximum gross weight limit of 80,000 pounds.** The I-40 study also shows that an even higher percentage of trucks exceeded axle weight limits and violated the bridge formula.

Other states have controls to address bypassing - MVD does not currently have a program to address the problem of bypassing. Other states address the problem through the use of portable scales. According to a 1979 General Accounting Office report: "State enforcement officials believe that 65 percent of all permanent scales are easily or very easily bypassed and only 11 percent were rated as very difficult or impossible to bypass."*** A Transportation Research Board report states that "[F]or the

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* The PRMS report noted that not all the overweight trucks would be interstate - some would be local Yuma traffic. The data was collected with weigh-in-motion equipment.

** TPD conducted these studies with its high speed WIM scales. These scales represent a relatively new technology that allows trucks to be weighed at highway speeds. MVD has questioned the accuracy of the findings based on how the WIM scales were calibrated. Although MVD officials agree there is an overweight problem in Arizona, it questions the high proportion noted in these two studies.

*** Comptroller General of the United States, 1979. Excessive Truck Weight: An Extensive Burden We Can No Longer Support. Report to the Congress of the United States. General Accounting Office, Washington, D.C., p. 71.

permanent weigh stations to be most effective, (they) must be supported by the roving portable crews in order to reduce the chance of bypassing trucks."* Several states use portable crews as part of their port operations. For example, Oregon has portable crews as part of the port staff. The Oregon portable crews are assigned to locations based on truck volume information provided by state and local law enforcement officers. In addition, assignments are based on certain types of haulers known to run overloaded trucks, such as gravel and lumber haulers, as well as seasonal activity information. Iowa also uses portable crews in conjunction with its permanent weigh stations. Whenever a permanent weigh station is open, Iowa has officers patrolling bypass routes around the weigh station.

MVD's plan to address bypassing will be limited - MVD is taking steps to address bypassing of ports. However, the implementation of the plan is limited to the eastern and northern borders of the State.

MVD plans to curtail operations at six smaller, minor ports - five on the eastern border and one on the northern border. These six smaller ports will operate at reduced hours and each will become a base for one mobile crew. These mobile crews will work the highways immediately adjacent to their ports of entry.

Since MVD has not recently patrolled bypass routes, this limited implementation will strengthen weight enforcement operations at the two major eastern ports (San Simon and Sanders) and one northern port (Page). However, the rest of the ports (Ehrenberg, Kingman, Nogales, Parker, San Luis, St. George (Utah), Topok and Yuma) will continue to operate without mobile crews to monitor or patrol their bypass routes.

Moreover, due to weight enforcement's low priority within MVD, mobile crew activity of those included in the area port system may be limited. For

* Transportation Research Board, 1981. National Cooperative Highway Research Program Synthesis of Highway Practice 82: Criteria for Evaluation of Truck Weight Enforcement Programs. Transportation Research Board, National Academy of Science, Washington, D.C., p. 32.

example, driver's license functions continue to have a higher priority than does weight enforcement (for further discussion see page 14).

Interior Mobile Crews Are Not Sufficiently Utilized

In addition to strengthening its port weight enforcement, MVD needs to more fully utilize its interior mobile weight crews. Currently, the Division's weight enforcement efforts to deter overweight trucks within the interior of the State (such as urban areas) are inadequate. Interior mobile crews are necessary to ensure compliance by trucks driven only within the State. Although the interior mobile crews perform a valuable function, their time dedicated to weight enforcement activities has been limited. In addition, the mobile crews do not perform weight enforcement operations at night.

MVD has interior mobile crews assigned by zone working out of Flagstaff, Phoenix and Tucson. The crews' weight enforcement activities include patrolling and monitoring roads. Mobile crews use portable wheel weigher scales* and semi-portable ramp scales in their weighing inspections. Portable wheel weighers are used by mobile crews in patrolling and stopping trucks suspected of being overweight based on probable cause.** Semi-portable ramp scales are set up in one location usually for a few hours. Mobile crews may weigh all trucks within a two mile radius of the semi-portable scale or flag over only those they suspect to be in

* Wheel weigher scales are about the size of bathroom scales. Each weighs individual tires or sets of adjacent tires, and they are used in sets of four. Based on national data, wheel weighers weigh the fewest numbers of trucks but have the highest citation rate. The higher citation rate is due to the selective weighing of suspected trucks.

** Probable cause is based on officers' knowledge of how an overweight truck may ride, certain companies known to run overloaded trucks, and type of commodity carried. According to a 1979 Government Accounting Office report, state officials identified typical cargoes found on overweight trucks. The typical cargoes were mostly "dense, heavy commodities, such as steel, agricultural products and petroleum products."

violation. MVD's interior mobile crews also schedule weight inspections with safety and weight inspection operations of other jurisdictions. The mobile crews' other related activities include checking registrations, operating permits, diesel fuel tax accounts, and oversize/weight permits. In addition, they perform other field services activities, such as school bus inspections and driver's license tasks.

Mobile Crews Are Needed For Weight Enforcement - Interior mobile weight enforcement crews are necessary to deter overweight trucks traveling within the state. Although the ports and mobile crews patrolling bypass routes are good deterrents for trucks traveling in and out of Arizona, they do not catch overloaded trucks traveling only within the state. According to a 1979 GAO report, approximately half the annual truck travel is on urban roads.* This urban traffic includes freight movements between points in the same area and from outside the urban area.

Several MVD officials believe that the real problem of overweight trucks is not with those hauling interstate, but with those trucks traveling only within the state's borders. The 1979 GAO report identified types of trucks and commodities that run overweight and tend to travel only short distances.** They are dump trucks hauling sand, gravel or excavation materials to and from construction sites; concrete mixers; and garbage trucks. According to Federal Highway Administration officials, garbage truck manufacturers admit that many garbage trucks with compactor units are actually overweight when they come off the assembly line.

Data from Phoenix area cities indicate that a substantial number of trucks in this urban area are overweight. For example, during sporadic selective weight enforcement operations,*** Tempe and Mesa found 74 and 35 percent, respectively, of the trucks weighed to be over the State's weight limits.

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* Comptroller General of the United States, 1979, p. 18.

** Comptroller General of the United States, 1979, pp. 19-20.

*** Selective enforcement consists of only weighing trucks suspected of being overweight. Therefore, a higher portion of those weighed under a selective enforcement operation will be overweight than if all trucks are weighed.

Phoenix, which has a daily selective enforcement operation, cited 16 percent of the trucks weighed for violation of weight laws. Since Arizona has no fixed scales on roads in the interior of the State, mobile crews are essential in enforcing the State's motor carrier weight statutes.

Mobile Crews Have Spent Limited Time On Weight Enforcement - Although the MVD mobile crews' primary duty is weight inspections, these officers actually have spent less than 50 percent of their time in this function. Between October 1985 and March 1986 all crews spent only 49 percent of their available time performing weight enforcement tasks. As shown in Table 1 (page 15), the crews weight enforcement activity varies among the zones. For example, during four of the six months analyzed, the northern zone crew rarely performed weight enforcement activities. The central zone weight enforcement activity has fluctuated, but ranged from 42 to 100 percent. The southern zone's weight enforcement activity ranged from 25 to 56 percent.

The mobile crews are assigned to other enforcement tasks because MVD's management gives lower priority to weight enforcement. MVD management has stated that driver's license and other field enforcement functions receive more public attention than do overweight concerns. For this reason, the mobile weight enforcement crews, which are considered to be the most flexible group within field services, are assigned to other functions as needed.

TABLE 1

INTERIOR MOBILE CREWS'PERCENTAGE OF TIME SPENT[1]
ON WEIGHT ENFORCEMENT ACTIVITIES

Month And Year	Mobile Crew Location	Number Of Authorized Hours Available	Hours Spent On Weight Activities	Percentage Of Time
Oct. 1985	Central	588	419	71%
	Southern	882	250	28
	Northern	294	17	6
	OCTOBER TOTAL	1,764	686	39
Nov. 1985	Central	556	456	82
	Southern	834	247	30
	Northern	278	0	0
	NOVEMBER TOTAL	1,668	703	42
Dec. 1985	Central	588	249	42
	Southern	882	224	25
	Northern	294	0	0
	DECEMBER TOTAL	1,764	473	27
Jan. 1986	Central	588	363	62
	Southern	882	320	36
	Northern	294	271	92
	JANUARY TOTAL	1,764	954	54
Feb. 1986	Central	556	522	94
	Southern	834	356	43
	Northern	278	51	18
	FEBRUARY TOTAL	1,668	929	56
March 1986	Central	620	620	100
	Southern	930	520	56
	Northern	310	237	76
	MARCH TOTAL	1,860	1,377	74
	GRAND TOTAL	10,488	5,122	49

(1) Hours available for weight crew operations were obtained by developing an average monthly productive hours based on ADOT's Performance Control System (PeCos) annual productive hours calculation. The PeCos calculation deletes annual, sick and other miscellaneous leave from annual hours. Holiday hours for each month with a holiday were subtracted from this monthly average. The remaining monthly productive hours were then multiplied by the number of authorized mobile crew officers for each zone to obtain the number of authorized hours available. Downtime due to breakdown of scales or vacant positions was not taken into consideration.

Source: MVD zone area supervisors and region manager, Department of Transportation

Some states assign mobile crews solely to weight enforcement activities. For example, Arkansas, Florida, Pennsylvania and Minnesota have full-time mobile scale teams whose primary responsibility is weight enforcement. If other responsibilities are assigned, they consist of other motor carrier activities such as truck safety and registration inspections. In addition, to maintain weight enforcement as a top priority, other states have controlled staff assignment by limiting the area supervisor's authority to transfer personnel among functions.

Mobile Crews Rarely Do Night Inspections - The mobile crews rarely perform truck inspections at night. Although a TPD study showed a higher percentage of overweight trucks traveling between 11 p.m. and 6 a.m., night inspections are rarely performed. Night inspections have not been scheduled due to the lack of radio contact during these hours and, in the past, the lack of generators for lighting. Although the crews now have generators, night inspections are still not being scheduled. Night inspections are considered to be particularly dangerous because MVD officers are not armed and do not have an adequate radio communication system.* To counter these safety problems the mobile crews could try to coordinate night inspections in conjunction with DPS or other law enforcement agencies. The mobile crews are safer working with other law enforcement agents who are armed and have access to 24-hour communication systems. However, a recent attempt to coordinate a night inspection with DPS failed because of scheduling conflicts.

Several states perform night inspections. Night inspections are perceived as an important deterrence to overweight trucks. In fact, a 1981 Transportation Research Board study recommended that all states consider establishing night weighing inspections, even if such inspections are

* The MVD radio system is manned only during the eight-hour day shift. In the past DPS monitored MVD's frequency 24 hours a day, but this was discontinued approximately ten years ago when DPS switched to a high band frequency. The low frequency radio band used by MVD causes a great deal of interference and transmission problems. The system's poor quality limits its usefulness to the mobile crews.

scheduled randomly.* Two states - Florida and Arkansas - employ mobile crews on a 24 hour basis. Other states schedule irregular shifts, thereby using mobile crews at various times and days.

CONCLUSIONS

MVD's weight enforcement activity is inadequate. The Division's port of entry enforcement needs enhancement to curtail bypassing. In addition, the Division's interior mobile crews need to be more effectively deployed.

RECOMMENDATIONS

1. MVD should use mobile crews statewide to ensure random monitoring of all bypass routes into the state.

2. MVD should increase its use of mobile crews to conduct weight enforcement activities for intrastate traffic.

3. MVD should routinely schedule night inspections by mobile crews. Moreover, MVD should more closely coordinate with DPS the scheduling of night inspections to ensure DPS presence during such operations.

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* Transportation Research Board, 1981, p. 44.

FINDING II

INOPERATIVE SCALES ALLOW MANY TRUCKS TO PASS THROUGH PORTS OF ENTRY WITHOUT BEING WEIGHED

In addition to the problems of overweight trucks bypassing scales at Motor Vehicle Division (MVD) ports of entry, inoperative scales at MVD ports of entry weaken weight enforcement operations. Scales at the major ports of entry are frequently inoperative. As a result, 13 percent of the trucks that could be weighed are not weighed. One major cause of frequent downtime is scales that are not designed for the high volume of traffic at the ports. As much as $600,000 may be required to repair the existing port of entry scales.

Port Of Entry Scales Are Frequently Inoperative

During fiscal year 1984-85, more than one-quarter million trucks, or 13 percent of the trucks that could have been weighed, were not weighed because port scales were inoperative. The problems with inoperative scales were particularly extensive at two major ports. The Sanders scale, which weighs an average of 1,382 trucks per day, was inoperative a total of 236 days between July 1984 and April 1986 (35 percent). The Ehrenberg scale, which weighs an average of 631 trucks per day, was inoperative 105 days (16 percent). In addition, the Kingman port of entry scale on Route 93 has had major maintenance problems, although it handles a lower volume of traffic. Between July 1984 and April 1986 the scale has been inoperative 156 days (23 percent). Table 2 (page 20) shows the estimated number of trucks not weighed due to scale downtime during this period.

TABLE 2

ESTIMATED NUMBER OF TRUCKS NOT WEIGHED
DUE TO SCALE DOWNTIME
FISCAL YEARS 1984-85 AND 1985-86(1)

PORT OF ENTRY	ESTIMATED NUMBER OF TRUCKS NOT WEIGHED 1984-85(2)	ESTIMATED NUMBER OF TRUCKS NOT WEIGHED 1985-86(2)
Sanders	165,800	163,000
Ehrenberg	61,100	61,200
Kingman	27,400	2,400
Topock		23,300
Yuma		15,400
Nogales		500
TOTAL	254,300	265,800

(1) The data collected for fiscal year 1985-86 includes only the first ten months of the year.

(2) The estimated number of trucks not weighed was calculated by multiplying average daily traffic in the port by the number of days the scale was down.

Source: Prepared by Auditor General staff from MVD port of entry data

Scale Equipment And Installation Have Been Inadequate

The current problems with inoperative scales at the ports of entry have resulted, at least in part, because MVD has not effectively selected or installed some of its scale equipment. Several of the major ports of entry have scales that are not designed to withstand high volumes of heavy truck traffic. Additionally, some of the scale installations have created obstacles for proper scale maintenance.

Some port of entry scales are not adequately designed - Scales are not designed for extensive weight enforcement operations. A substantial number of trucks pass through the major ports of entry daily. For example, the Ehrenberg and Sanders ports generally weigh 350 to 1,500 trucks per day. Scales that are subjected to such volume should be designed to endure excessive application.

Arizona uses commercial motor truck scales for enforcement purposes. Commercial scales are generally light to medium duty scales used in

trucking companies and mining operations. Two scale companies have indicated that several MVD scales are not designed for the high volumes of traffic they weigh. For example, one scale manufacturer indicated that the basic design of the Sanders scale appears inadequate for the volume of traffic at that location. In addition, the same manufacturer pointed out that the Kingman scale's existing structure is insufficient for the load being applied. Continual high stress* on the scales has resulted in maintenance problems such as cracked deckings, cracked steel supports and unstable load cells.**

Heavier quality scale equipment is available. These scales are referred to as being of railroad quality. A railroad quality scale differs from a commercial scale because it contains more structural steel support and is designed to endure much heavier truck loads and volumes of traffic. In contrast, a normal commercial scale is generally not able to withstand the high volumes and heavy truck loads encountered in weight enforcement operations.

The difference in cost between a railroad quality scale and a commercial scale is minimal - approximately 10 to 15 percent. The extra cost is basically for the additional steel to strengthen the scale. For example, the cost of commercial motor truck scales most recently purchased by MVD for its major ports has ranged from $67,000 to $92,000. Therefore, railroad quality scales for these ports would have cost approximately $74,000 to $106,000. Although additional funding for scale purchases would be needed, the long term operating costs should decrease significantly.

Poor communication and budgetary constraints have affected the quality of

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* Another problem that may be exacerbating scale deficiencies is trucks moving over the scales at too great a speed. Trucks often travel over port scales without stopping. Scale company representatives have indicated that if this occurs too often and at too great a speed, scale damage will result.

** Load cells are the devices that measure the weight of a truck as it passes over a scale.

some scales MVD has purchased in the past. MVD relies on Highways Division engineers to provide the expertise to determine the type of equipment needed. According to a Highways engineer, they must work within parameters provided by MVD when preparing specifications. Parameters involved in a scale project include the scale type that MVD wants and the funds available to purchase the scale. However, communication between MVD and Highways engineers regarding the specifications appears to have been limited.* Further, money available for past scale purchases has been limited. Consequently, MVD has purchased lighter duty scales.

Steps can be taken to upgrade MVD's most recently purchased scales which have not yet been installed. MVD plans to install these scales at the Ehrenberg port of entry soon.** An ADOT structural engineer indicated that these scales are structurally the best designed scales MVD has purchased. However, MVD weight enforcement personnel and one scale manufacturer have expressed concerns that even these scales may not be of sufficient quality to withstand the high volumes of heavy traffic. MVD's scale technician has pointed out some actions that can be taken to upgrade them. For example, heavy duty load cells would increase their weighing capacity. Also, reinforced welding of the scales' understructures and the addition of structural cross beams would improve scale structure. MVD's scale technician has estimated the cost to upgrade one scale to be approximately $4,000. Any decision to upgrade the Ehrenberg scales should be made before they are installed since improvements will be much more difficult and expensive to implement after installation.

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* Communications between MVD and the Highways Division appear limited. In discussions with MVD personnel and Highways engineers, it became clear that little communication has occurred and each Division is not completely aware of the other's activities and requirements. Although some meetings have occurred between MVD personnel and ADOT engineers, they appear not to have involved MVD staff that are most knowledgeable about the scales. Consequently input from these staff may not have been incorporated into scale project plans.

** These scales were purchased in 1984 but installation was initially delayed due to lack of funds. Later delays were due to studies of the viability of incorporating weigh-in-motion technology at the Ehrenberg port.

Scale installations have created obstacles for scale maintenance - In addition, shortcomings in scale installations have compounded the problem of inadequate scales. MVD's scale technician has indicated that it is difficult to properly maintain and inspect some scales because their installation provides little or no access for maintenance purposes. Poor accessibility can result in excessive accumulation of debris under a scale because it is difficult to properly clean. In addition, improper drainage in some scale pits allows water to accumulate. Excessive accumulation of water and debris can seriously damage or destroy a scale. For proper maintenance and inspection of these poorly installed scales, they would have to be hoisted out of their pits. This is generally a major and costly operation requiring a large crane.

Needed Repairs Could Cost $600,000

Because of the condition of the scales, a significant amount of money and additional maintenance resources are needed for an adequate weight enforcement operation. A 1985 report prepared by ADOT identified $600,000 needed to repair the port of entry scales with significant maintenance problems noted at that time.* These estimated costs illustrate the extent of repairs required to upgrade some scales to suitable operating condition. Scale manufacturers and MVD weight enforcement personnel agree that a significant amount of money is needed to adequately repair some port of entry scales. For example, both Sanders east- and westbound scales are in need of a complete renovation. The Sanders eastbound scale was purchased in 1981, and is now totally inoperative because it has been stripped of parts to repair the westbound scale. As an alternative, MVD could consider replacing some of its commercial scales with railroad quality scales. MVD needs to analyze the long-term costs and benefits of purchasing new scales versus repairing existing

* This amount excludes funds needed to repair the Ehrenberg scale since it will be replaced in the near future.

ones. Although the short-term costs to repair existing scales would be less, significant savings may be realized in the long run if the least serviceable scales are replaced. The purchase of railroad quality scales could reduce the amount of time and money spent on maintenance and repairs. In addition, costs due to road damage could be reduced and overweight fine revenues could be increased because more trucks will be weighed.

CONCLUSIONS

MVD port of entry scale difficulties have hampered its weight enforcement operation. Scales at some of the major ports have frequently been inoperative. Frequent downtime of scales has, in part, resulted from inadequate scales and scale installations. MVD has not coordinated effectively with ADOT engineers to develop acceptable specifications for scales. MVD will have to determine whether repair or replacement is the most cost-effective approach.

RECOMMENDATIONS

1. MVD should consider investing in heavier duty, railroad quality scale equipment in any future purchases. Factors to be considered in determining the type of scale needed include daily volume of traffic being weighed and the type of trucks that will be weighed.

2. When designing future scale installations, MVD needs to ensure that access for maintenance and proper drainage are taken into consideration.

3. MVD should analyze the long-term costs and benefits of purchasing new scale equipment versus repairing its existing static scales. MVD should then request funds to replace or restore scales to operational levels.

4. MVD should coordinate more closely with Highways Division engineers and develop adequate specifications for scale equipment and installations. If it is determined necessary after discussions with engineers, the new Ehrenberg scales should be reinforced before they are installed.

FINDING III

OVERLOADED AXLES, WHICH ARE DAMAGING AND OCCUR FREQUENTLY, CANNOT BE CITED UNDER EXISTING LAW

Although overweight axles are a major cause of pavement damage, effective enforcement action cannot be taken in most cases. Current statutes do not allow a citation to be issued if a driver can bring the axle weight under legal limits by shifting the truck's load. As a result, more than 90 percent of Arizona's weight violations during a recent three-year period could not be cited.

Overloaded axles damage and decrease pavement life. Pavement damage caused by a truck is primarily determined by the weight on each axle. American Association of State Highway Transportation Officials road test data collected from 1958 to 1962 show that increasing the weight on an axle exponentially increases pavement damage, and the expected life of the pavement correspondingly decreases (see Introduction and Background, page 1). For example, an axle load weighing 26,000 pounds, which is 30 percent more weight than the legal single axle limit of 20,000 pounds, does 200 percent more damage than the legal load. Therefore, a truck that has a legal gross weight but has an overloaded axle still causes pavement damage and decreases pavement serviceability and life.

Current Statutes Are Deficient

Under current law, the most common weight violation - overweight axles - cannot be cited in most cases. Arizona Revised Statutes (A.R.S.) §28-1031.E requires officers to allow shifting of a load when a vehicle is only over axle weight not over gross limits. If the load is shifted to be within legal axle load limits, the driver cannot be cited.

Although shifting weight off overloaded axles is desirable, it may not always prevent pavement damage. MVD personnel stated that some truckers readjust their loads after they are weighed. Some trucks are equipped with one or more variable load axles which allow easy redistribution of

weight.* Therefore, truckers can comply with an officer's orders to shift axle loads and later easily reshift to illegal loadings. Truckers do this because it allows their trucks to ride more smoothly.

Most Violations Are Not Cited

Because of this deficiency in existing law, action cannot be taken against most of Arizona's weight violations. As shown in Table 3, 94 percent of Arizona's weight violations detected from 1982 to 1984 could not be cited.** Of the 64,150 violations that occurred during this period, 60,247 involved overweight axles that were shifted, but no citation was issued.

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* A.R.S. §28-1009.E allows a vehicle to have variable load axles, but prohibits the shifting of axle weights while the truck is moving. This statute requires that certain equipment be located outside the truck cab so the driver cannot vary axle weights during transport. However, according to Motor Vehicle Division weight enforcement officers, many drivers are still able to easily redistribute their loads, even while in their cabs.

** Arizona has a relatively low citation issuance rate, partially as an outcome of the statutory restrictions on axle citations. Although Arizona ranked 19th nationally in total number of trucks weighed in 1984, it ranked 40th in number of axle citations and 49th in total weight citations written. However, in 1984 Arizona allowed 21,023 load shifts that were not cited. Arizona ranked 5th in the nation for number of loads shifted. As shown in Table 3, Arizona has consistently shifted a large number of loads from 1982 through 1984, but has issued relatively few axle citations.

TABLE 3

ARIZONA AXLE AND GROSS CITATIONS
LOADS SHIFTED FOR FISCAL YEARS 1982, 1983 and 1984

	Fiscal Year 1982	Fiscal Year 1983	Fiscal Year 1984	3 Year Total
Trucks Weighed	1,102,544	1,018,820	1,414,707	3,536,071
Gross Citations Issued	949	1,087	645	2,681
Axle Citations Issued	572	487	163	1,222
TOTAL WEIGHT CITATIONS	1,521	1,574	808	3,903
Loads Shifted	21,424	17,800	21,023	60,247
TOTAL VIOLATIONS	22,945	19,374	21,831	64,150

Source: Federal Highway Administration, United States Department of Transportation, Overweight Vehicles - Penalties & Permits, An Inventory of State Practices, reports dated December 1984 and December 1985

Citation authority needed - The statutory limitation on axle citations is viewed by Federal Highway Administration (FHWA) and Motor Vehicle Division (MVD) management as a weakness in Arizona's weight enforcement program. An FHWA official stated that shifting alone is not a good deterrent. Most states allow issuance of a citation in addition to requiring the truck load to be shifted. Therefore, for Arizona to strengthen deterrence, a citation should not be prohibited. In addition to the deterrence aspect, issuing citations for overweight axles would help compensate for the road damage caused by the axle overload prior to shifting.

CONCLUSIONS

Arizona does not adequately deter axle weight violations. Statutes prevent issuance of a citation if a driver agrees to shift overloaded axles. This is viewed by MVD and FHWA as a weakness in Arizona's weight enforcement program.

RECOMMENDATION

The Legislature should consider modifying A.R.S §28-1031.G so an overweight axle citation can be issued even if the load is shifted.

FINDING IV

MORE THAN ONE-THIRD OF ALL VIOLATORS ARE NOT ASSESSED MINIMUM STATUTORY FINES

Changes are needed to strengthen the deterrence effects of overweight penalties. Although Arizona's fine schedule for weight violations is generally adequate, these fines are often not imposed. In addition, an inconsistency in statutes should be revised to provide harsher penalties against all repeat violators.

Monetary penalties are a common method to deter overweight vehicles and prevent highway deterioration. However, to deter overweight vehicles, penalties need to be maintained at effective levels and be enforced. According to the Federal Highway Administration (FHWA), overloading will continue as long as it is economically feasible. Unless the penalty is high enough to impact the trucker's profit, enforcement will not affect decisions to run overweight. If penalties are high enough, there must also be a high likelihood that violators who are caught will be assessed the penalties.

Arizona Fine Schedule Appears Adequate

In general, Arizona's statutory fines appear adequate. Although the FHWA would like to see fine levels increased nationwide, Arizona fines compare favorably with most other states. Minimum weight fines are set forth in Arizona Revised Statutes (A.R.S.) §28-1031.C. These fines range from $50 for an initial violation of 1,001 pounds, to $1,000 for violations in excess of 4,750 pounds. (See Table 5, page 51, for examples of fine amounts.) Any weight violations less than 1,000 pounds carry only a $1 fine. Overweight fines are deposited in the Highway User Revenue Fund to maintain streets and highways and are allocated to cities, counties and

the State.*

Thirty-Eight Percent Of Violators Are Not Assessed The Minimum Fine

The judicial system often fails to enforce the minimum statutory penalties. Of overweight violators, 38 percent are assessed fines less than the statutory minimum.** The average fine reduction is $750 for those fines that are reduced. This not only diminishes the deterrence effect of the penalties, but also translates into revenue loss to the Highway User Revenue Fund of more than $600,000 per year. The following case examples illustrate this problem.

- A vehicle was found to be 6,740 pounds over registered weight. The minimum statutory fine for being 6,740 pounds overweight is $1,000 plus the 37 percent additional assessment, for a total of $1,370. The violator pleaded guilty and was fined $50.

- A citation was issued for being 5,570 pounds over the legal weight of 80,000 pounds. By statute, the fine should have been $1,370; however, no fine was assessed.

- A violator was cited for being 9,200 pounds over gross weight. The fine by statute should have been $1,370. However, the fine was set at $456.21 ($333 fine plus 37 percent additional penalty).

- A citation was issued for a gross weight violation of 17,000 pounds. The violator was fined only $100 instead of the $1,370 set by statute.

Our sample of 312 citations indicated that enforcement of the minimum penalties varies greatly from court to court. Some courts reduce fines very often, while others tend to adhere to statutes. Table 4 (page 33) illustrates this variance for the 18 courts with at least five citations in our sample.

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* Every fine, penalty or civil sanction for violation of the motor vehicle statutes also carries an additional penalty assessment of 37 percent under A.R.S. §41-2403.A. For example, an additional $74 would be added to a $200 overweight fine. These additional monies are deposited in the Criminal Justice Enhancement Fund for support of various law enforcement and crime prevention programs.

** A statistically valid sample of 312 was randomly selected from the population of 2,111 weight citations with guilty dispositions for the period July 1, 1984, through April 16, 1986. Of the 312 violations selected, 120 (38 percent) received less than the minimum penalty. The sample had a reliability of plus or minus 5 percent at the 95 percent confidence level.

TABLE 4

VARIANCES IN COURT ADHERENCE
TO MINIMUM STATUTORY FINES

COURT	NUMBER OF CITATIONS	MINIMUM PENALTIES IMPOSED	PERCENTAGE OF COMPLIANCE
Peoria JP	15	0(1)	0%
West Mesa JP	13	1	8
Mesa City JP	10	1	10
East Mesa JP	9	1	11
Scottsdale JP	8	1	13
Glendale JP	5	1	20
Kingman JP	6	2	33
Apache Junction City	5	2	40
Green Valley JP	9	4	44
Quartzsite JP	9	5	56
Yuma JP	27	17	63
Flagstaff JP	7	5	71
Parker JP	7	5	71
Tucson JP (Nos. 1,2,4,5,6)	15	11	73
Bowie JP	51	44	86
Duncan JP	7	6	86
Sanders JP	24	21	88
Lake Havasu JP	54	50	93

(1) The Peoria JP Court does not add the 37 percent surcharge to weight fines.

Source: Compiled by Auditor General staff from all courts with five or more citations in the random sample of 312 citations.

Although current statutes clearly establish minimum penalties, many courts believe they have the authority to lower or suspend weight fines. Court personnel provided numerous reasons for reducing fines. Two of the most common reasons are hardship and belief that the driver is the wrong person to penalize (see Finding V, page 37).* However, Title 28, Section 1031, clearly establishes the minimum fines for overweight violations and a February 21, 1986, Legislative Council opinion defines the extent of the court's authority.

* Plea bargaining between a defendant and a prosecutor is another way a fine can be reduced. This may occur when the cited party pleads not guilty.

> . . . courts only determine by construction the scope and intent of the law when the law itself is ambiguous or doubtful. If a law is plain and within the legislative power, it declares itself and nothing is left for interpretation. To allow a court, in such a case, to say that the law must mean something different from the common import of its language, because the court may think that its penalties are unwise or harsh, would make the judicial superior to the legislative branch of the government and practically invest it with the lawmaking power. Sutherland, Statutes and Statutory Construction, section 46.03 (4th Ed., Sands, 1972). Therefore, there is no authority to allow a justice court to reduce a civil penalty prescribed by A.R.S. section 28-1031, subsection C below that required by that section. . . .

In June 1986 the Arizona Supreme Court issued a memo to all Arizona courts of limited jurisdiction advising them to impose the minimum statutory penalties after this problem was brought to the Court's attention by our Office. The Motor Vehicle Division (MVD) should monitor court adherence to minimum statutory weight fines and report discrepancies to the Arizona Supreme Court.

Statutes Should Be Revised To Provide Increased Deterrence For Repeat Violators

In addition to the problems with courts not imposing minimum fines, current statutes do not provide adequate deterrence against repeat violators. Arizona statutes are inconsistent in that they provide increased penalties for repeat violations up to 2,500 pounds, but provide no increase in penalties for repeat weight violations over 2,500 pounds.

According to a 1979 report by the United States General Accounting Office, assessing higher fines for repeat violators discourages truckers from running overweight. However, current statutes do not specifically establish harsher penalties for repeat violations of more than 2,500 pounds. For example, one violator was cited four times within five months for being at least 3,300 pounds overweight. The statutes provide a fine of $600 for each violation of 3,300 pounds no matter whether it is a repeat violation or not. In contrast, if this violator had been only 2,500 pounds overweight each time, his fines would have doubled from $200

for the first offense to $400 for the third offense. Therefore, the statutes should be amended to address repeat violations of 2,501 pounds and over.

Further, it appears that existing repeat violator penalties for violations up to 2,500 pounds are not being imposed because courts are unaware of an offender's past violations. However, data on prior violations are available through MVD. Officers could request a records check by radio and indicate any prior violations found on the citation, thereby alerting the court of the repeat violator status.

CONCLUSIONS

Although statutory fine levels are generally adequate, courts often fail to impose required minimum fines. Stricter judicial enforcement of overweight penalties would enhance enforcement efforts. Further, providing harsher penalties for all drivers who repeatedly violate weight laws would also strengthen enforcement.

RECOMMENDATIONS

1. MVD should monitor courts' adherence to the statutory weight violation fine schedule and report problems to the Arizona Supreme Court.

2. The Legislature should consider assessing higher penalties for repeat violations in excess of 2,500 pounds.

3. MVD should develop a procedure to inform courts of repeat violators so increased fines can be imposed.

FINDING V

GREATER ENFORCEMENT EFFORT SHOULD BE DIRECTED AT TRUCKING COMPANIES

Enforcement effort should be directed at trucking companies as well as drivers. Owners who cause their trucks to be illegally overloaded could be held liable for the resultant fines. In addition, the Motor Vehicle Division (MVD) could conduct weight audits to deter trucking companies from weight violations. Civil suits against companies that are serious weight violators would further increase compliance.

Companies Could Be Required To Pay Weight Fines

Because trucking companies share a role in the operation of overweight vehicles, consideration should be given to holding companies responsible for violations. For example, the city of Tempe holds companies responsible through a 1985 city ordinance.

Currently, trucking companies or owners are not held responsible for weight violations committed with their trucks. Although existing statutes appear to give courts the flexibility to hold truck owners responsible for weight violations, this is generally not possible in practice. An Arizona Legislative Council opinion reaffirms this.

> Generally, one is not criminally responsible for unlawful acts of his employee, even though committed in the employer's business, unless they were directed by or knowingly acquiesced in by the employer. . . . Therefore, the person who actually drove or moved a vehicle over the maximum allowable gross weight is the one who is responsible for payment of the fine. . . . An owner is only responsible if he knowingly caused or permitted the overweight vehicle to be driven or moved on the highway.

In practice, it is difficult to prove that the owner knowingly caused or permitted the vehicle to be overweight. Further, courts are generally required to assess any fines against the person specifically named on the citation. In the case of weight citations, this person is almost always the individual driving the truck at the time of the violation.

However, some courts believe they need the flexibility to penalize companies for weight violations. As noted in Finding IV, some courts do not assess the statutory minimum penalties because they feel the company, not the driver, was at fault. A statutory change would be required to allow courts to hold drivers and trucking companies jointly responsible for payment of weight fines. The following examples illustrate the need for this flexibility.

- Prior to the enactment of Tempe's ordinance, a driver cited for being overweight argued in a Tempe court that his company told him to run overweight. The company owner, subpoenaed by the driver, took the stand and confirmed that he had told the driver to run overweight and would continue this practice. The judge could not fine the company under existing statutes and subsequently suspended the driver's fine.

- A driver working for a small sand and gravel hauler was arrested in Tempe for an overweight violation. The driver gave police a fake name because he feared being fired from his job. He subsequently told authorities the drivers from his company were under company orders to run overweight but were fired if they received weight citations. The company owner subsequently arrived at the police station to pick up his truck's keys and fired the driver. The company had a high number of previous weight violations.

Cases similar to this prompted a Tempe judge to request a city ordinance addressing company liability for overweight offenses. As of June 1985 the City of Tempe can penalize companies or individuals owning trucks that operate over weight limits. The Tempe ordinance on overweight vehicles states that when the driver is not the owner of a vehicle, the owner can be held liable for weight citation penalties along with the driver.* According to a Tempe judge, it is easier to collect a large weight fine from a company than from a driver. Therefore, fewer fines would go uncollected if companies were held responsible. In addition, the judge indicated that trucking companies that knowingly overload their trucks now tend to avoid the Tempe area as a result of Tempe's ordinance.

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* One drawback to this ordinance is that it applies only to truck owners. An individual or company leasing trucks and overloading them cannot be penalized.

Weight Audits Could Deter Overweight Trucking Companies

Audits of truck companies weight billings would further strengthen deterrence. Weight audits are similar to other audits conducted by the State and could be an effective tool for discouraging companies from intentionally and repeatedly overloading their trucks. However, MVD abandoned efforts to conduct weight audits of trucking companies.

A weight audit involves the review of a trucking company's weight records for evidence of trucks being illegally overloaded. Weight audits could result in the issuance of overweight citations or the imposition of civil penalties based on an estimate of actual road damage caused by the companies' overweight trucks. In addition, after a certain number of weight violations, truck registrations and permits could be revoked.

A weight audit would be similar to other truck-related audits or inspections currently conducted by the State. In fact, MVD already reviews the data that would be used in a weight audit, but does not have specific statutory authority to use it for weight enforcement purposes. Trucking company records are currently open to inspection by MVD for motor carrier and fuel tax enforcement.* Trucking companies are also required to maintain records relating to motor carrier safety.** These records are subject to inspection by MVD or DPS. Using these other existing sections of statutes MVD currently reviews such records as weight tickets, bills of lading, records of truck mileage traveled within the State, shipping invoices and delivery receipts. Weight audits would entail a review of bills of lading and weight-related records such as shipping invoices. Therefore, no additional data would be required for weight enforcement purposes. Further, State statutes currently establish weight records as prima facie evidence of trucks' weight. A.R.S. §28-1031.H states:

* A.R.S. §28-1599.07 addresses record keeping and audits for the motor carrier tax. It requires motor carriers to ". . . maintain those books, records and other data the director requires" and to ". . . make the records available during normal business hours. . . ." Similar provisions for fuel tax enforcement are found in A.R.S. §28-1504 and 28-1505.

** A.R.S. §28-2403.

> A weight certificate or other document evidencing the receipt of goods for shipment issued by a person engaged in the business of transporting or forwarding goods, stating the gross weight of the vehicle with load which is in excess of the prescribed limitation permitted by §§28-206, 28-1008, 28-1009 or 28-1009.01, is prima facie evidence that the weight of a vehicle and load is unlawful. [Emphasis added]

Providing MVD with the specific authority to conduct weight audits would appear to be consistent with this statute and with other truck-related enforcement activities.

Weight audits have been effective in curtailing the number of overloaded vehicles in at least one other state. Minnesota augments its weight enforcement activities by giving its law enforcement officers the legal right to inspect weight tickets at elevators, grain exchanges and warehouses. These weight tickets, by Minnesota statute, are relevant evidence of the weight of the load. The use of this relevant evidence in civil penalties against trucking companies has been an efficient utilization of Minnesota's officers as well as an effective deterrent. Officers conducting audits check four times more truckloads per officer than officers operating scales.* Experience in Minnesota indicates that compliance with weight laws has significantly increased since the audits were initiated. In addition, Minnesota's relevant evidence law forestalls truckers from avoiding weight enforcement operations since truck companies are required to keep accurate truck weight records. Companies can be penalized for not maintaining required records.

In 1980 MVD attempted to cite a company for weight violations based on audits of weight billings. In a case against a Phoenix area sand and gravel company, MVD used criminal statutes to obtain a search warrant to gather weight billing information. For a five-month period in 1979, 68

* In a one-year period from October 1, 1983, through September 30, 1984, 11 officers checked 670,346 truckloads by checking weight billings. This averages out to more than 60,000 truckloads checked per officer per year. In contrast, Minnesota's fixed scale operations weighed approximately 15,000 trucks per officer per year. Arizona's rate of trucks weighed per officer is comparable to Minnesota's.

weight billings indicated gross vehicle weight violations of at least 3,000 pounds. The case went to a Maricopa County Justice Court, but a clear decision was not reached because the court ruled the search warrant was improperly executed.*

After the case, MVD's Attorney General representative made a recommendation.

> In order to continue systematic prosecutions of overweight violations using the business' records, I believe you need statutory authority to either issue subpoenaes or conduct weight audits. Ideally you should have both powers.

The Attorney General representative continued.

> If the division wishes to test its present authority to conduct weight audits it could do so by attempting to conduct a weight audit at a firm who has previously refused to permit such an audit. If they refuse again, then you could apply to the Superior Court for a civil court order requiring the firm to permit such an audit. That procedure would crystalize the issue.

Legislation was proposed in 1981 to allow MVD to audit weight records and civily assess violators. This legislation was part of a comprehensive bill on administrative enforcement of weight violations which did not pass and was never reintroduced. MVD did not pursue testing its present authority to conduct audits, but current MVD managers could not explain why.

** The court ruled that the auditor did not fully explain to the auditee the impact of the search warrant. Therefore, the court dismissed the evidence but not the case. The company and the state settled in May 1981 when the company pleaded guilty to eight counts and paid $2,452 in fines. The original fine levied was $15,235 for 59 misdemeanor counts of gross weight in excess of a vehicle's declared gross weight.

Civil Enforcement Has Proven Effective

Civil action against habitual or excessive offenders has been taken against companies to recover damages resulting from overweight violations. Both Texas and Minnesota have successfully sued truckers, shippers or companies for damages, although the two states take different approaches.

In Texas the attorney general's office has obtained injunctive relief against companies and successfully sought damage recovery. The defendant's record of criminal citations is the primary evidence supporting the state's case. Settlement amounts are based on a formula developed by the University of Texas that estimates road damage caused by overweight trucks.

Minnesota has enacted a civil penalty statute specifically applicable to overweight violations. Civil actions may be taken against trucking companies or leasees and penalties may be imposed in accordance with a statutory schedule. Minnesota relies extensively on weight audits to provide the evidentiary basis for its civil actions.

In both states, civil actions have proven effective. Texas has experienced a 30 percent reduction in gross weight violations since the start of its civil enforcement efforts in 1984. The state collected over $1.3 million in settlements in less than seven months. Minnesota officials attribute the 55 percent reduction in overloaded trucks in its state during fiscal years 1982-83 and 1984-85 to the civil enforcement program. A total of approximately $1.2 million in civil penalties has been collected in the four years since the civil penalty law became effective.

Arizona could initiate a civil enforcement program without enacting additional legislation. Arizona Revised Statutes §28-1013 already provides an avenue for Arizona to file civil suits against companies. The statute states, in part, that any highway or structure damage resulting from:

> . . . operating, driving or moving any vehicle, object or contrivance weighing or measuring in excess of the maximum weight or height in this article. . . may be recovered in a civil action brought by the authority in control of the highway or structure.

Further, the statute states,

> When the driver is not the owner of the vehicle, object or contrivance, but is so operating, driving or moving the same with the express or implied permission of the owner, then the owner and driver shall be jointly and severally liable for any damage.

However, this statute has never been used in the area of overweight truck damage. Firms that ship overweight loads in Arizona currently have little incentive to keep their shipments within legal limits.* By suing companies responsible for overweight shipments, enforcement authorities can effectively deal with the source of many overweight problems. In order to do this, MVD will have to begin tracking companies and individuals who own or lease trucks that violate weight laws.

CONCLUSIONS

Trucking companies are not currently held responsible for weight violations. Courts are generally limited to fining only the drivers of overweight trucks, not the owners or companies. In addition, MVD has not followed up on earlier efforts to conduct administrative audits of trucking companies. Civil penalties would be an effective way to recover damage costs from companies that repeatedly violate weight laws.

* Evidence indicates that some companies repeatedly violate weight laws. Of a random sample of 312 weight citations, 97 indicated the name of the trucking company (trucking company name is noted on citations by some officers, although it is not required information). Of these 97 citations, five companies were identified that had at least two weight citations. One of these companies accounted for 12 of the 97 violations.

RECOMMENDATIONS

1. The Legislature should consider amending the statutes to permit courts to hold trucking companies or individuals who own or lease trucks jointly responsible with drivers for all weight violations.

2. The Legislature should consider giving MVD the specific authority to conduct weight audits of trucking companies.

3. MVD should consider bringing civil action against trucking companies that are the most serious repeat violators of weight laws in order to recover actual damages.

FINDING VI

MVD NEEDS BETTER INFORMATION FOR ITS WEIGHT ENFORCEMENT PROGRAM

The Motor Vehicle Division (MVD) needs more and better data to effectively operate its statewide weight enforcement program. A system for tracking information from weight citations is needed. In addition, the weight enforcement program needs better weigh-in-motion data to determine the extent and location of overweight problems.

Two types of data are needed for effective weight enforcement operations. First, information from weight citations needs to be gathered to increase MVD's ability to evaluate its effectiveness and to enhance enforcement efforts against habitual violators. Second, more data on the location and movement of overweight trucks in Arizona need to be collected through the use of weigh-in-motion equipment. Both types of information are needed to plan and to utilize limited resources more effectively.

Citation Tracking System Is Needed

MVD does not have an adequate system for obtaining needed information from weight citations. The only system currently available was not designed to provide weight enforcement data, therefore, MVD does not receive all the information needed. MVD should expand its existing system to collect the information it requires.

The only system MVD has for collecting data from weight citations was not designed for this purpose. This system was designed to track the points accumulated against a driver's license as a result of traffic citations. Because Arizona Revised Statutes §28-444.B requires that MVD be notified of all traffic violations, weight citations are also entered into the system even though they do not result in the accumulation of points against a driver's license. However, since collection of weight citation information is not a primary function of the system, MVD does not take steps to ensure that the disposition copies of all weight citations are

remitted by the courts; therefore, they may not all be input.* Further, even if the citations are input, the system was not designed to collect the kind of information the weight enforcement program needs, which renders it relatively useless for this purpose.

Essential Information Is Not Tracked - Because MVD's current traffic citation system provides limited information for weight enforcement purposes, it cannot meet the needs of the weight enforcement program. At least four types of information not presently available need to be collected from weight citations.

- Trucking company name - This would allow MVD to determine which trucking companies habitually overload trucks. MVD could then take the appropriate enforcement action against these companies (see Finding V, page 37).

- Time and location of the violation - This would help establish patterns of overweight violations. Further, this would allow MVD management to evaluate the effectiveness of its crews and of the program as a whole.

- Fine amounts imposed by courts for each citation** - This would permit MVD to monitor whether courts are imposing the minimum fine amounts required by statute (see Finding IV, page 31). In addition, this information is needed to meet Federal reporting requirements.

- Gross and axle weights and axle configuration of the violating truck - This is needed to monitor whether courts are imposing minimum statutory fines. In addition, this data could be used to calculate costs of damage done to roads in Arizona by overweight trucks (see Introduction and Background, page 1). It could also help provide documentation for civil suits against companies (see Finding V, page 37).

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* For example, the City of Phoenix does not remit any weight citations to MVD because they do not affect driver's license points.

** Although there is a field for fine amount in MVD's current citation tracking system, it often contains inaccurate data. This is because data entry operators are not required to enter anything in this field. Further, when they do enter the amount, it may be distorted because the system cannot accept anything greater than $999.99. Weight fines exceed this figure at least 13 percent of the time.

Much of this data could also be generally used by MVD management to assign mobile weight crews and to ensure that limited weight enforcement resources are being used in the most effective manner possible.

Other Arizona enforcement agencies monitor traffic enforcement information such as the number of violations per month and year to date, the type of violations per month and year to date, and where violations occurred. Reports are then generated and used to identify patterns and trends and to assist in selective enforcement efforts.

Existing system could be expanded - The existing traffic citation system could be expanded to include a secondary purpose of tracking information from weight citations. The Arizona Department of Transportation (ADOT) is planning to redesign the traffic citation data base in the near future. Fields for location, company name, and gross and axle weights could be added and the field for fine amount could be expanded. The system could be programmed to gather this data only for citations related to weight violations. The system would not have to generate the actual reports, however. The data on weight citations could be transferred to floppy disks and could, therefore, be manipulated on a microcomputer.* This would allow MVD personnel to sort the data and prepare any type of report they need.

Since the source for data entered into this system is the citation copy remitted to MVD by the courts, some information would have to be added to weight citations by the issuing officer. For example, company name and more detailed information on axle and gross weights would need to be included on all weight citations. MVD weight enforcement officers and officers from other agencies involved in weight enforcement would have to be instructed on how to include the extra information since standard citation forms do not have specific spaces for it.

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* This process was used successfully by Auditor General staff to examine and summarize the weight citation data that exists on MVD's current traffic citation system.

More Weigh-In-Motion Data Is Needed

MVD needs to collect more weigh-in-motion data to determine the extent and location of overweight problems across the State. MVD as well as enforcement agencies in other states are encouraged by the Federal Highway Administration (FHWA) to gather data on overweight trucks through weigh-in-motion systems. However, MVD data on port bypassing and intrastate noncompliance in the State's interior are very limited.

According to FHWA's December 1985 summary report, nationwide there is a lack of statistically reliable data to estimate the magnitude of the overweight truck problem. FHWA is promoting the use of weigh-in-motion (WIM) scales to gather data on overweight trucks. Weigh-in-motion scales incorporate relatively new technology that allows vehicles to be weighed at normal driving speeds. FHWA considers WIM equipment accurate enough for monitoring truck weight, providing design data, planning analyses and some enforcement activities (See Other Pertinent Information, page 49)

Currently, a few states use WIM data to determine schedules for their mobile team activity. For example, Oregon and Florida schedule time and locations for their mobile crews based on WIM data. WIM data can be used by MVD as a planning tool for weight enforcement activities. Because the data would indicate the extent and location of overweight problems, MVD could use the data to determine where mobile scale crews should be assigned. In addition, such data would assist ADOT engineers in determining pavement design requirements.

ADOT has not significantly utilized weigh-in-motion equipment to document port bypassing or intrastate noncompliance with weight laws. ADOT's Transportation Planning Division (TPD) used WIM scales for only one significant study in October 1985. This study gathered data on traffic volume and truck weights on I-40 near Winona and Seligman, and on I-10 near Tonopah, as requested by ADOT's Materials Section. The results indicated serious overweight truck problems at these locations. However, after the study was completed, MVD questioned the accuracy of the data based on concerns that the WIM scales may not have been properly calibrated.

TPD currently has plans to use WIM scales to collect data in the Phoenix area for the Maricopa Association of Governments. However, MVD would like to be assured that WIM scales are properly calibrated before WIM data are utilized in weight enforcement programs. TPD and MVD need to establish acceptable procedures to ensure that the WIM equipment is calibrated each time it is used for weight enforcement data gathering.

CONCLUSION

MVD does not have the data it needs to maximize the effectiveness of its weight enforcement program. MVD does not track data from weight citations. In addition, weigh-in-motion scales have not been widely used to document the extent and location of overweight truck problems.

RECOMMENDATIONS

1. MVD needs to implement a weight citation tracking system to gather information on individual weight citations. In addition to the data already collected, MVD needs the following information from each weight citation.

    - trucking company name
    - location of violation
    - axle and gross weights
    - fine amount assessed by the court

2. MVD needs to encourage more extensive utilization of WIM scales to document the extent and location of overweight truck problems in Arizona. MVD needs to work with ADOT's Transportation Planning Division to resolve MVD management's concerns with WIM scale accuracy.

OTHER PERTINENT INFORMATION

During the audit we developed other information pertinent to the Motor Vehicle Division's (MVD) Weight Enforcement program. This information addresses: 1) weigh-in-motion technology, 2) organizational placement of weight enforcement functions, 3) the weight violations fine structure and penalties, 4) city and county enforcement, and 5) use of CB radios.

New Technology In Weight Enforcement Operations

Use of weigh-in-motion (WIM) equipment, which is currently being considered by The Arizona Department of Transportation (ADOT), could alleviate some existing port of entry problems. WIM systems can be used to reduce high truck volume going over existing static scales by sorting overweight trucks from legal trucks. Further, some types of low speed WIMs could replace static scales in the future. In both cases, traffic would flow more smoothly through the ports, reducing backup problems during periods of heavy truck activity.

Decreasing truck volume over static scales could be accomplished by using WIMs for sorting purposes. A few states - for example, Florida and Pennsylvania - already use WIMs for screening overweight vehicles on the approach ramps to weight stations or ports of entry. Under this arrangement, a WIM scale is located on the approach ramp leading into the port. Trucks entering the port pass over this scale before reaching the static scale. Only those trucks near the maximum legal weight limit would be directed over the static scale. All other trucks would be routed around the static scale for credential verification. The resulting lower volume of trucks going over the static scales could reduce wear and tear and lessen the need for frequent scale repair. Overweight citations would still be written based on the certified static scales.

In the future, low speed WIMs could replace port of entry static scales. While a high speed WIM can be used only for sorting purposes because of limited accuracy, a low speed WIM scale is more accurate. The accuracy of this type of scale results from the slower speed design and the very flat

surface both preceding and following the scale. With appropriate equipment and a flat approach to the scale, a low speed WIM may achieve accuracies similar to that of a static scale. A few European countries have used low speed WIM scales for several years for issuing overweight citations. However, courts in the United States generally do not consider WIM data as admissible evidence of violation. Extensive testing is necessary to provide the data needed to confirm that a low speed WIM scale is accurate enough to be certified in Arizona for issuance of weight enforcement citations.

WIM scales could help ease the backup problem when there is a large volume of truck traffic. Frequently, ports of entry such as Sanders and San Simon have potentially hazardous truck backup problems during periods of heavy truck activity. A low speed WIM scale can weigh a truck much faster than a static scale. Alternatively, a high speed WIM sorter allows many trucks to avoid having to go over the static scale, eliminating weighing time entirely. Those states using WIMs for sorting purposes are able to move trucks through their ports much faster.

ADOT is considering several ways to implement new technology in its weight enforcement program. Plans are being developed to test low speed WIMs at MVD's Ehrenberg port of entry. In addition, ADOT is participating in a multistate study of high technology applications for weight enforcement.

Agency Placement of Weight Enforcement Functions

Organizational placement of the commercial vehicle weight enforcement function varies among the 50 states. Although Federal weight laws govern vehicle load limits on interstate highways, each state is responsible for enforcement of its own weight laws within its borders. According to Federal Highway Administration information gathered in 1986, most states (28) place weight enforcement in a law enforcement agency such as a department of public safety or state police. For example, Minnesota, California and Washington have established commercial vehicle divisions within their state police agencies which are responsible for all commercial vehicle laws, including weight enforcement. Twelve other states, including Georgia, New Mexico, North Carolina and Arizona place

the function in their highway or transportation department. Eight states enforce weight laws through joint efforts of two agencies. For example, both Pennsylvania's transportation department and state police assign permanent personnel to weight enforcement activities. Mississippi and Kansas have placed the weight enforcement function in the state tax commission and the department of revenue, respectively.

Weight Violation Fine Structure And Penalties

Arizona's weight violation fine structure needs more uniformity and equity. Statutory penalties for weight violations decrease on a per pound basis for offenses over 4,750 pounds. Table 5 illustrates the penalty structure for a first offense. Violations of 4,000 to 5,000 pounds result in the most severe penalties. However, as the magnitude of the violation increases beyond this level, fine amounts per pound drastically decrease.

TABLE 5

FINE PER POUND EQUIVALENT OF SELECTED MINIMUM STATUTORY WEIGHT FINES

Amount Over Gross Weight	Fine/Pound Overweight	Dollar Fine
1,001	5¢	$ 50
2,000	7.5¢	150
3,000	16.7¢	500
4,000	17.5¢	700
5,000	20¢	1,000
6,000	16.7¢	1,000
7,000	14.3¢	1,000
8,000	12.5¢	1,000
9,000	11.1¢	1,000
10,000	10¢	1,000
15,000	6.7¢	1,000

Source: Arizona Revised Statutes §28-1031.C.

There is great variance in overweight fine structures in the United States. Thirty-four states and the District of Columbia have a set fine per pound rather than a fixed table of fines as Arizona has. This allows fines to increase as the weight violation increases. Consequently, the most severe violators, who cause the most damage, are assessed higher fines and are more effectively deterred. For example, South Dakota has a cents-per-pound fine structure ranging from five cents per pound for violations less than 3,000 pounds up to 25 cents per pound for violations over 5,000 pounds. Some sates use a combination of a fixed fine table and a cents-per-pound penalty.

In addition, the penalty for violating registered weight limits may be inappropriate when compared with other weight violation penalties. Arizona Revised Statutes (A.R.S.) §28-206 provides a graduated scale of registration fees for vehicles weighing more than 8,000 pounds (including load). The weight a vehicle is registered for is the declared gross weight. Vehicles found to be in excess of their declared gross weight are subject to civil sanction for a first offense under A.R.S. §28-1031.

A violator of A.R.S. §28-206 can be within State and Federal weight limits but not registered for enough weight. In contrast, axle and gross weight offenders violate State and Federal weight limits, causing increased road damage. However, those violations causing increased road damage receive lower penalties. For example, a vehicle found to be 1,500 pounds over its declared gross weight of 16,000 pounds is subject to a fine of $100 and must also pay a fee to reregister the vehicle at this new weight. In contrast, a vehicle 1,500 pounds over legal gross weight of 80,000 pounds is subject to only the $100 fine.* In general, the penalties for weight registration violations appear to be excessive compared to the severity of the offense.

* The statutes appear to contain contradictory penalties for violation of A.R.S. §28-206. Under this statute, the offense is to be treated as a Class 2 misdemeanor. However, the penalty structure for violation of §28-206 is in §28-1031. Under §28-1031, the §28-206 offense is subject to a civil sanction and is not treated as a Class 2 misdemeanor unless it is a repeat violation. Because the civil sanction provisions of A.R.S. §28-1031 are more recent than A.R.S. §28-206, we determined the penalty in our example based on A.R.S. §28-1031.

City And County Enforcement

There is no monetary incentive for cities or counties to enforce weight limitations. Under A.R.S. §28-1031.G, overweight citation revenue must be submitted to the State for deposit in the Highway User Revenue Fund. No citation revenue remains with the city or county.* In contrast, fines from other traffic violations, such as speeding, are deposited in the General Fund of the governmental entity issuing the citation. MVD officials would like to see cities become more aggressive with weight enforcement. Increasing city and county involvement in weight enforcement increases staff and resources devoted to the weight enforcement function. The requirement that cities and counties forfeit all their weight citation revenues may hinder their involvement.

* A maximum of $10 may be deducted as reimbursement of administrative costs.

AREAS FOR FURTHER AUDIT WORK

During the course of our audit we identified potential issues that we were unable to pursue due to time constraints.

- Are outstanding warrants relating to Motor Vehicle Division (MVD) weight citations receiving proper attention?

It is not clear whether warrants relating to MVD citations are being effectively enforced. When such warrants are issued, MVD is responsible for transporting arrested suspects back to the court where the warrant originated. The distance from the location of arrest back to the court can be substantial. MVD officials indicated it is too much trouble to arrange for transporting suspects arrested on outstanding weight-related warrants. An effective system of issuing and enforcing warrants is necessary to ensure payment of criminal weight penalties. Further audit work is needed to evaluate the way MVD handles and enforces warrants relating to its weight citations.

ARIZONA DEPARTMENT OF TRANSPORTATION

206 South Seventeenth Avenue Phoenix, Arizona 85007

BRUCE BABBITT
Governor

CHARLES L. MILLER
Director

December 2, 1986

DEC 1986
RECEIVED
AUDITOR
GENERAL

Mr. Douglas R. Norton
Auditor General
State of Arizona
2700 North Central Avenue, Suite 700
Phoenix, Arizona 85004

Dear Mr. Norton:

Thank you for the opportunity of meeting with you and your staff to discuss the forthcoming audit report on weight enforcement activities in the Motor Vehicle Division. We were pleased to provide feedback to the preliminary draft and to provide this written response to the revised report.

Many of the problems and needs addressed in the report have long been concerns of Department and Division management and we do not take issue with its central thrust or its recommendations. However, there are two areas upon which we feel it important to comment:

A. Reference is made in the report to poor communication between the Department's Motor Vehicle and Highways Divisions in development of scale specifications. Certainly, such communication is paramount to the success of our weight enforcement efforts and we are constantly working toward continued improvement. However, it is important to note that most of the problems referred to occurred some years ago. Except for the Ehrenberg scales, which were referenced as "the best designed scales MVD has purchased", the most recent scale installations occurred well over four years ago. In fact, virtually all the Motor Vehicle staff involved in those installations have left the Department. Since that time, communication between Motor Vehicle and Highways Divisions has improved on a number of fronts.

B. Several times, the report refers to Weigh-In-Motion studies conducted by the Department and to data indicating that more than one third of the trucks weighed were over gross weight limits. We agree that such studies point to potential problem areas but feel it important to note that Weigh-In-Motion is an emerging technology. The Department is conducting further studies to validate the initial findings.

These concerns aside, we find ourselves essentially in accord with the specific findings and recommendations in the draft report.

FINDING I: We agree that bypassing of ports of entry and limited intrastate enforcement weakens the overall weight enforcement effort. We further agree that MVD should make greater use of mobile weight teams for interstate and intrastate enforcement and that operations should routinely include night and weekend checkpoints. Several relevant actions are underway:

a. A budgetary appropriation has been received to "mobilize" personnel previously assigned to six of the smaller ports of entry covering the northern, eastern, and western borders of the state. A total of eight mobile port teams will derive from that action, the maximum number of teams possible without adding FTEs to the present cadre. Additional equipment obtained will augment the intrastate weighing operation, consisting of nine two-person teams.

b. The Transportation Planning Division will be providing, on a routine basis, current reports of heavy vehicle traffic on all likely bypass routes. New information programs are being developed to provide at least monthly reports to field supervisors so that mobile team deployment will be matched to commercial traffic patterns in the enforcement area. Night and weekend operations will not be unusual and adequate radio communications will be provided.

c. The Motor Vehicle Division is in the last stages of realigning its field services personnel along program lines. The new alignment will place all port of entry and mobile weight personnel into a group separate from the driver licensing and vehicle enforcement functions that have tended to consume their time.

d. ADOT has developed a multi-year plan to continue the growth of the mobile intrastate weighing operation. The addition of four teams per year is anticipated until a 24-hour, 365 day operation is achieved. The cost effectiveness of adding mobile port teams will be continually assessed and new teams will be requested as justified. We would expect the first expansions of the mobile port teams to enhance our operations along the western border of the state.

FINDING II: We agree that inoperative scales have allowed many trucks into the state without being weighed. We further agree that much of the problem is due to development of inadequate specifications in years gone by. Several of the

scales installed in the early 1980s have proven to be poorly designed. Since MVD relies totally on Transportation Planning and Highways Divisions for engineering support, it is difficult to affix responsibility for the poor specifications that have resulted in inadequate scales. However, we agree that better communication when those specifications were being developed would no doubt have achieved a much more satisfactory result. We also agree that MVD should consider replacing problem installations with heavier duty railroad quality scales. As another alternative, a combined operation using a weigh in motion pad for screening and a single-platform static scale for weighing suspected violators will be considered. We concur with the recommendations that future installations ensure proper drainage and accessibility for maintenance.

Several specific actions are underway:

a. The Motor Vehicle Division has been working closely with Transportation Planning Division and Highways Division to install and test at the Ehrenberg Port of Entry a slow speed weigh in motion pad adjacent to the three-platform static scale being installed. The purpose of this project is to gather empirical data regarding the reliability of SWIM (slow weigh in motion) for enforcement. It is hoped that the data will prove the SWIM reliable enough to meet court standards for citations to be issued.

b. Prior to the purchase of any new static scales, ADOT will consider the cost effectiveness of installing heavy duty railroad quality scales. Other alternatives that emerge as technology advances also will be considered.

c. ADOT will analyze the costs and benefits of replacing problem scales with heavier installations and will seek the necessary funding to either replace or restore such scales to operational levels.

d. Careful consideration will be given to the need to reinforce the new Ehrenberg scales prior to their installation.

e. MVD will continue its practice of recent years expanding its reliance on engineers from other ADOT divisions for a variety of technical needs, including development of specifications for permanent and portable scales.

FINDING III: We agree that overloaded axles, which are damaging and occur with some frequency, cannot be cited under existing law and that the Legislature should consider modifying A.R.S. 28-1031.E to allow for issuance of a citation upon discovery of a violation.

a. The Motor Vehicle Division has had numerous discussions with legislative and law enforcement representatives regarding the need for such a change and, in the past, has introduced legislation to accomplish that purpose. The bill did not pass.

b. The Department will again seek such a statutory change in its 1987 Legislative Program.

FINDING IV: We cannot affirm or disaffirm the extent to which local courts fail to assess minimum statutory fines for overweight violations. As pointed out in the report, Motor Vehicle does not have a systematic information system to monitor court performance or to otherwise provide useful information regarding overweight citation issuance. We agree that the fine schedule is not the central problem, but that higher penalties for repeat violators would seem beneficial.

a. The Department will seek statutory change to assess higher penalties for repeat violators in its 1987 Legislative Program.

b. An automated information system will be developed to capture and collate statistics useful for monitoring enforcement and judicial performance as regards minimum fines.

c. M.V.D. officers will be trained to make prior conviction information available to the court, as appropriate. The procedure for providing such information to local courts will be strengthened and formalized.

FINDING V: We agree that greater enforcement efforts should be directed at holding trucking companies accountable for overweight violations.

a. As referenced in the report, in 1981 ADOT proposed legislation to allow MVD to audit weight records and civilly assess fines. That legislation did not pass.

b. ADOT will pursue amendment of statutes to permit courts to hold trucking companies jointly responsible for weight violations.

c. The Motor Vehicle Division will conduct further research into the legality, equitability, and practicality of conducting weight audits of trucking companies.

d. ADOT will research the legality and feasibility of

bringing civil action against serious repeat weight violators to recover actual damages to state highways.

FINDING VI: We agree that better information is needed to effectively direct and evaluate weight enforcement programs throughout the state. We agree that the information and systems needs identified in the report are part of what would be needed for an information system to be effective. We also agree that, as such technological innovations as weigh in motion are validated, they should be incorporated into the State's weight enforcement programs. Several initiatives involving MVD, TPD, and Administrative Services Division in cooperative efforts are underway:

a. At the request of MVD, Transportation Planning is installing additional traffic classifiers/counters on identified bypass routes. The Motor Vehicle Division is working with the Information Systems Group of Administrative Services Division to develop an information system that will translate the data gathered from traffic classifiers/counters into reports accessible to area managers around the state. The information provided will facilitate deployment of intrastate and mobile port teams to match commercial traffic patterns.

b. The Motor Vehicle Division, Highways Division, and Transportation Planning have collaborated on redesigning the impending installation of new static scales at the Ehrenberg Port to accommodate a structured study of slow-speed weigh in motion. The purpose of that study is to gather data comparing SWIM weights with those of the certified static scale in the hope that, if validated, SWIM weights can eventually be used to support issuance of citations. On a separate track, MVD and TPD have collaborated with the Arizona Transportation Research Center at A.S.U. to contract a study of the legal and practical obstacles to using weigh in motion in Arizona.

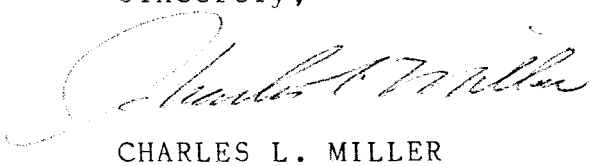
c. As priorities allow, Motor Vehicle Division will work with the Information Systems Group to develop and implement a citation tracking and information system. Such a system will be used to compare court-imposed fines with those mandated by statute, monitor the incidence and location of weight violations, and provide a base of information for program evaluation.

In conclusion, allow me to reiterate ADOT's commitment to significantly accellerate its efforts to prevent overweight violations on Arizona's roadways. We feel strongly that this commitment is reflected clearly in plans developed and actions taken over the last months. We expect demonstrable gains in our

weight enforcement effectiveness within a matter of months and are particularly confident in the impending realignment of MVD field officers creating and segregating 17 two-officer teams to mobile weight enforcement. We are also very hopeful that such technological innovations as WIM and SWIM will prove valid for a variety of applications, from pre-screening at ports of entry to mobile enforcement.

Thank you again for the wealth of information provided in your report and for the opportunity to frame this response to your findings and recommendations.

Sincerely,



CHARLES L. MILLER
Director
Department of Transportation