

INTERIM REPORT No. 1

A CASE STUDY OF DEER-VEHICLE
ACCIDENTS ON I-64

by

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(A Cooperative Organization Sponsored Jointly by the Virginia
Department of Highways and the University of Virginia)

Charlottesville, Virginia

April 1971
VHRC 70-R37

I. SUMMARY OF FINDINGS

This case study of interstate fencing has indicated several findings which should be reviewed by the Virginia Department of Highways' Environmental Quality Division.

The major findings are:

1. Approximately 55 deer-vehicle collisions occurred on I-64 between Gum Springs and Charlottesville within the first three months after the highway was opened to traffic (September 25 to December 11, 1970).
2. The property damage resulting from the deer-vehicle accidents amounted to \$9,550.
3. No human injuries were reported in connection with the accidents covered by this case study.
4. Fencing specifications appear to allow gaps at box culverts and bridges which allow animals to enter the interstate highway.
5. Minor changes in fencing standards could eliminate hazards to motorists. In addition, these changes could help conserve Virginia's wildlife.
6. It appears that less than 50% of deer-vehicle accidents are covered by accident reports at the state police area headquarters.

New York and Pennsylvania Highway agencies have found that: (a) A seven-foot fence is only a deterrent. A deer will jump fence, especially during hunting season. (b) A ten-foot fence is deer proof. (c) After a period of time, deer will use the larger culverts and underpasses, but will seldom use overpasses.

II. RECOMMENDATIONS

This case study has served to focus the researchers' attention on several minor changes in fencing specifications which could benefit the safety and convenience of Virginia's interstate system. Based on the findings of this study, the researchers recommend that several changes be made in the Department's fencing standards. Specifically, it is recommended:

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1. That the Virginia Department of Highways consider using the deer-proof fence designed by the Pennsylvania Department of Highways.
2. That the Virginia Department of Highways change interstate fencing standards to insure that the fence extends across the top of all box culverts.
3. That the Virginia Department of Highways change fencing specifications to provide for closing of the gaps at bridges and bridge retaining walls.
4. That the Environmental Quality Control Division consider having preliminary plans of highways reviewed by the Division of Game and Inland Fisheries to determine if a proposed project will intersect with established wildlife migratory paths. When future highways will pass through areas that are potential wildlife crossings, the deer fence should be specified.
5. That the Department should consider requesting a similar study for Virginia's entire interstate system.
6. That the Department request each maintenance area headquarters to file a report with the Environmental Division when a deer carcass is found.
7. That the Department consider erecting deer crossing signs in potential danger areas. It is recognized that these signs may not prevent all deer-vehicle accidents, but they would at least alert the motorist to deer crossing the highways.

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The principal investigator, while serving on a panel on environmental considerations, listened to a conservationist criticize highway departments in general for their disregard for wildlife adjacent to new highways. He made the point that new highways are sometimes built across virgin wildlife areas without regard to the impact on the wildlife.

During the same week, several newspaper articles cited the number of deer killed on I-64 between Gum Springs and Charlottesville in the period September 25, 1970 to December 11, 1970. The news stories indicated that within the 78 day period 55 white tail deer had been killed on I-64. Each of the deer-vehicle accidents represented a danger to the motorist traveling the new highway at expressway speeds. While the investigators were concerned about the impact on wildlife, the major emphasis had to be on the highway user and his safety.

METHODOLOGY

The principal investigator contacted each state police area headquarters in the counties of Louisa, Goochland and Albemarle. In each state police area, the officers were requested to review their files for accident reports involving deer-vehicle accidents.

The researchers next contacted the highway maintenance areas and obtained an estimate of the number of deer carcasses removed from the interstate during the period September 25, 1970 to December 11, 1970.

DEER-VEHICLE ACCIDENTS

The comparative figures on deer-vehicle accidents reported by the state police and highway maintenance area personnel are given in Table 1.

TABLE 1

ESTIMATED NUMBER OF DEER-VEHICLE ACCIDENTS

County	State Police Accident Reports	VDH Maintenance Area Records
Albemarle County	10	14
Goochland County	7	26
Louisa County	<u>4</u>	<u>15</u>
Totals	21	55

The amount of property damage is reported on each of the accident reports completed by the state police. However, no estimate is made by the Department employees when they remove a deer carcass from the highway since the Department's reports are not intended to show the property damage or bodily injury figures. While it is not possible to determine the actual amount of property damage resulting from such accidents, the researchers believe that it is important to understand the magnitude of the potential economic loss to the state of Virginia and the highway user.

Table 2 is based on the property damage figures shown on the state police reports. It should be noted that the property damage estimates are based on only 21 accidents. However, in the case of the column indicating the value of the deer killed the authors used a value of \$100 per carcass, which is the amount used by the state police on their accident reports.

TABLE 2

ESTIMATED PROPERTY DAMAGE OF DEER-VEHICLE ACCIDENTS

	Property Damage Per Accident ^{1/}	Value of Deer Killed	Estimated Total Property Damage
Albemarle County	\$ N/A	\$1,400	\$1,400
Goochland County	2,650	2,600	5,250
Louisa County	<u>1,400</u>	<u>1,500</u>	<u>2,900</u>
Totals	\$4,050	\$5,500	\$9,550

^{1/} Based on the property damage for the seven accidents reported in Goochland County and the four accidents reported in Louisa County.

FARM ANIMALS ON INTERSTATE RIGHTS-OF-WAY

The white tail deer are not the only animals which create traffic hazards. While conducting this study the principal investigator observed several types of farm animals that had entered the right-of-way of I-64. On one occasion, while driving in the westbound lane, he saw a small steer grazing on the embankment. This animal was observed three miles south of the Zion Cross Roads Interchange. The incident was reported to the maintenance superintendent of the Zion Cross Roads maintenance area.

On March 12, 1971 the researcher saw several pigs grazing on the bank beside the highway. This incident was reported and the animals were removed.

Several days later the researchers conducted a field inspection of the fencing along I-64. While conducting this inspection they found locations where animals evidently had entered the highway through openings in the protective fencing. An example of how farm animals could enter the highway is shown in Figure 1.



FIGURE 1.

BOX CULVERT INSTALLATION ON I-64 AT WHICH ANIMALS COULD
ENTER THE RIGHT-OF-WAY

It is recommended that the Department revise the specifications for interstate fencing to prevent such gaps. If the Department decides to revise the fencing specification the authors believe that consideration should be given to eliminating potential access near bridge retaining walls such as shown in Figure 2.

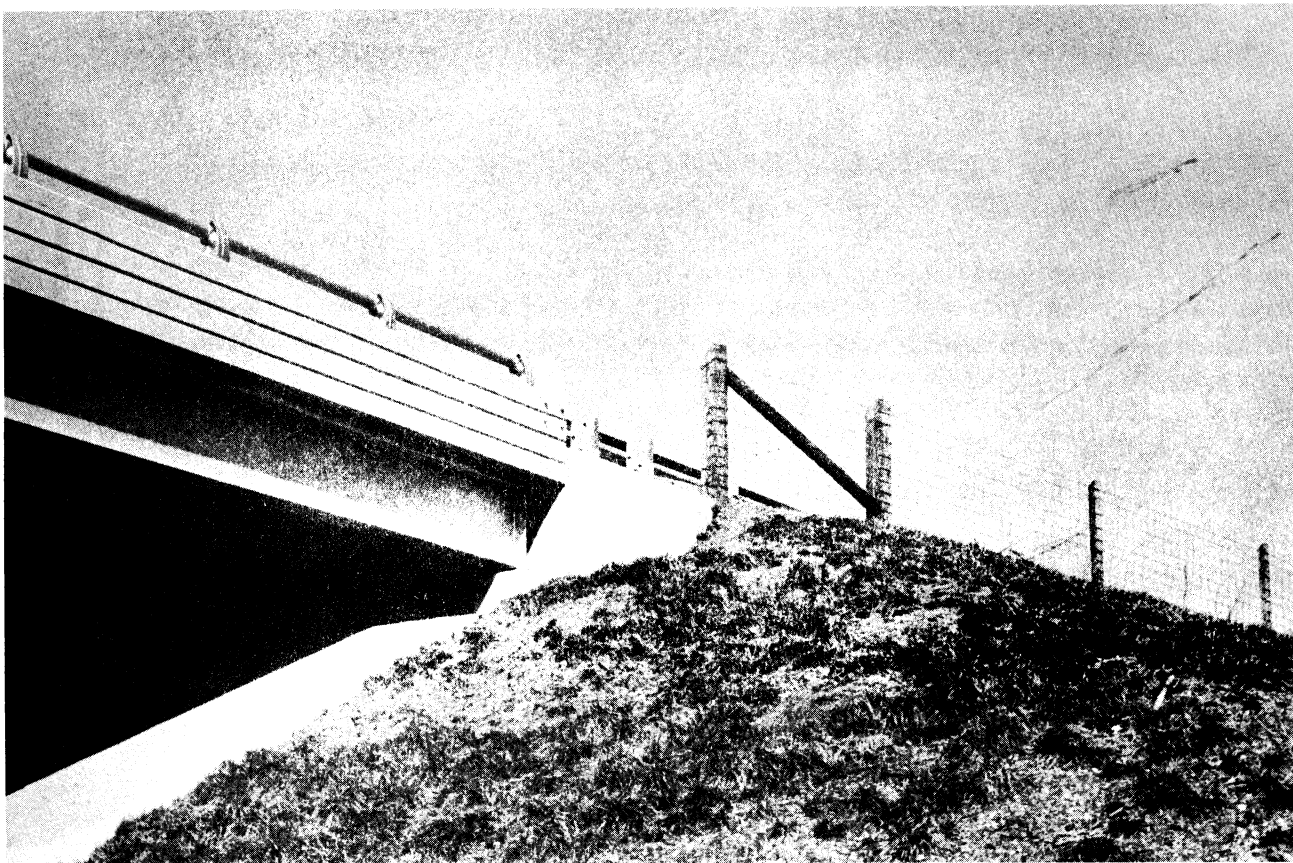


FIGURE 2.

GAP IN FENCING AT BRIDGE RETAINING WALL ON I-64

It is the authors opinion that a gap such as that shown in Figure 2 would allow some animals to gain access to the interstate. This type of opening would allow a bear, for example, to readily enter the highway. While bears are not a major problem in Virginia, there are several areas where bears are a potential problem. For example, the section of I-64 between Yancey Mill and Waynesboro.

