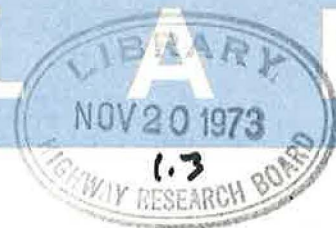


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RECYCLABLE RESOURCES AND THE HIGHWAY ENVIRONMENT: AN EXPLORATORY OVERVIEW

This Circular presents the transcript of a panel discussion which was part of the 52nd Annual Meeting of the Highway Research Board, January 1973. In this discussion the participants spoke as individuals, and their statements are not intended to represent official positions of the public agencies with which they are associated.

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RECYCLABLE RESOURCES AND THE HIGHWAY
ENVIRONMENT

INTRODUCTION

Ross D. Netherton, Chairman
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This panel discussion will focus on the junked car problem. It is a session based on the premise that much of the visual blight in roadside areas is related to the national problem of solid waste management and salvaging recyclable resources which this waste contains. One important facet of this is the unusable motor vehicle, whether it is abandoned on the highway or stored in a junkyard. Because these are recyclable resources, their threat to the visual environment also contains the promise that it can be reduced in great measure by integration of the roadside beautification program with the overall program of solid waste management.

We are particularly pleased that Leander Lovell, of the Office of Solid Waste Management Programs, Environmental Protection Agency, will lead off this panel. He is in a unique position to view the junkyard problem as part of the total complex of facilities for salvage of recyclable metals after the reusable spare parts have been removed from unusable cars. In his work he is able to see what I call the institutional framework in which this process functions, and in which it will have to function in the future.

There is an important economic aspect to this problem, and the second speaker, Leo Grossman, of the Scenic Enhancement Division, Office of Environmental Policy, Federal Highway Administration, has been administering the junkyard program of the Highway Beautification Act of 1965. In his position he has served on a number of interagency coordinating groups where government and industry exchange views on the problems of solid waste disposal. His special insight for this discussion will be the economics of the junked car problem.

The third panelist, Joseph Murphy, Director of the District of Columbia's Department of Motor Vehicles, is responsible for administering the laws on registration of motor vehicle, issuance of titles, and motor vehicle records. He deals first-hand with the legal problems involved in moving an automobile from active life through the process of salvage and recycle and his view of the resolution of these problems in the drafting and enforcement of legislation to eliminate abandoned cars is particularly valuable.

REMARKS BY LEANDER B. LOVELL
Office of Solid Waste Management Programs
Environmental Protection Agency

In his Message to Congress on the Environment on February 10, 1970, President Nixon took note of the abandoned motor vehicle problem in the following words: "Few of America's eyesores are so unsightly as its millions of junked automobiles." With these words he referred to a phenomenon which is not only deteriorating the nation's environment, but has been increasing steadily for the past decade. For example, in New York City, 2,500 cars were towed away as abandoned on the streets in 1960. In 1964, 25,000 were towed away as abandoned; and in 1969 more than 50,000 were so removed.

Frequently the cause of this problem, and the reason why junked cars must be measured in the millions, is explained in terms of the economics of the scrap metal industry. In the ordinary course of events, when a car is retired from use it goes first to a wrecker who strips it of its valuable, resaleable parts, and then to a scrap processor who reduces the remainder to scrap metal for sale to a steel mill. The prices paid by wreckers for junked cars often are less than the cost of transporting them to the wrecking yard. In the case of a severely damaged or cannibalized car, the wrecker, instead of paying for the car, may even charge the owner to tow it away. Thus the final

owner's economic incentive to deliver his car for salvage and scrap processing may be slight, or nonexistent, or even negative. In an effort to provide the needed incentive for salvage, there is a strong feeling that the initial price of an automobile should include not only the cost of producing it, but also the cost of its ultimate disposition.

Magnitude of the Car Abandonment Problem

The Environmental Protection Agency, along with the Council on Environmental Quality and various other agencies of government, have been very much concerned about this problem both before and since the President's remarks. In fact, the Solid Waste Disposal Act of 1965, as amended by the Resource Recovery Act of 1970, specifically makes reference to EPA's responsibility for junked automobiles. Section 205 contains the statement that

the secretary shall carry out an investigation and study to determine, among other things, recommended incentives, including Federal grants, loans and other assistance, and disincentives to accelerate the reclamation and recycling of materials from solid waste, with special emphasis on motor vehicle hulks.

Of the hundred million plus motor vehicles on our highways today, 8 to 9 million are retired from use annually. Over one million of these, however, are abandoned on public or private property. At the same time there are about 10 million vehicles in the process of being dismantled or converted into scrap by the salvage and scrap metal industry, and approximately 3 million vehicle hulks are accumulating and spoiling the scenery of our cities and countrysides.

By way of illustration, and to give further dimension to the problem, one car is abandoned every 30 minutes in our major cities. In New York, the rate is one every 10 minutes; in Chicago, one every 7 minutes. In rural areas the number of cars involved is not as large as in the cities, but there is an additional complication. Presumably cities can mount towaway programs to pick up these vehicles; but what is to be done about the eyesore vehicle when it is abandoned off the highway, in the woods, on public lands or private property? The national rate of abandonment at present is about 2,500 cars per day.

Junked Cars as Recyclable Resources

Before looking into the reasons for this advancing rate of car abandonment, one should identify the reasons for being concerned about the problem. There are several reasons. Abandoned vehicles produce a nationwide scenic blight, as noted in the President's remarks; and, wherever they are allowed to accumulate, they create local health and safety hazards. Moreover, they represent the neglect of a valuable recoverable resource; and this neglect leads to a waste of equally valuable virgin raw material which, in some instances, is known to be finite in its supply.

The following data illustrate the intrinsic value of a junked auto weighing 3,600 lbs. (1,636 kg). Fully separated into its components, it could yield about 2,500 lbs. (1,132 kg), of steel, 500 lbs. (224 kg) of cast iron, 32 lbs. (14.5 kg) of copper, 54 lbs. (24.5 kg) of zinc, 200 lbs. (91 kg) of aluminum, 20 lbs. (9 kg) of lead, and 400 lbs. (181 kg) of non-metallics. The total accumulation over a year of some 3 million hulks--a figure which is mounting from year to year--represents hundreds of millions of dollars' worth of reusable materials. Consider, also, that 60 percent of all rubber, 20 percent of all steel, 10 percent of all aluminum, 7 percent of all copper, 11 percent of all nickel, 35 percent of all zinc, and more than 50 percent of all lead consumed in the United States go for motor vehicle production and operation.

The Motor Vehicle Life-Cycle

Answering the question of why the rate of abandonment is so high requires an understanding of the entire motor vehicle lifecycle. The auto manufacturers start the cycle by their decisions as to design, durability, construction, and material composition. All of these directly affect the useful life of cars and the problems which will be encountered in reclaiming these cars when they reach the end of their useful life.

Next in the cycle is the auto owner; for it is he who ultimately decided how his vehicle is taken out of service. His decision to abandon his car or to enter it directly into

the dismantling and processing phases of the cycle will reflect his consideration of the time, cost and effort required by each of his disposal alternatives. If the owner elects to dispose of his car by entering it into the recycling industry, he must pay to have his vehicle towed to the dismantling yard.

If the owner is in fact willing and able to incur this cost, the dismantler has a choice either to accept it or reject it. If there are few or no resalable parts; or the demand for such parts is low, the wrecker may reject it. If the wrecker does accept the vehicle, he will dismantle it and transport the hulk to a processor who compresses it in a technique called "baling". This technique does not, however, produce a particularly valuable commodity since it does not separate and remove the contaminants in the scrap steel. Because of this fact the scrap processor may insist that the hulk be stripped of waste and contaminating materials before accepting it. The upholstery, rubber, plastics, and other similar materials were, in times past, removed by open burning of the car once its resalable parts had been taken out. Now, however, open burning is prohibited by law in many States and communities. Handstripping of these materials, particularly the copper wiring which is a serious steel contaminant, is a tedious and expensive job.

Transportation As A Key Factor

Making this product acceptable to steel producers is further hampered by the freight rate differential between scrap metal and its competitor, iron ore. Historically scrap metal has been discriminated against in favor of iron ore by significant disparities in transportation costs. The answer to why the rate of abandonment of automobiles is so high is that abandonment is often the cheapest and easiest way to dispose of a car. The fact that a vehicle has no value frequently leads to dumping it wherever the owner can find a place to do so.

An approach to the problem of creating an efficient, effective and economical method of disposing of auto hulks so that they can be re-used has two important aspects. Clearly States and communities can mount collection programs to bring or induce the public to bring in out-of-service vehicles for dismantling and scrapping. However, the key to success in this effort lies in finding a way to greater markets for scrap steel. Creating a greater demand for scrap steel will give the car owner and the dismantler more incentive to perform their roles as sources and processors of recyclable vehicles.

Expanding Markets for Scrap Steel

Making automobile scrap more desirable can be accomplished by improving the quality of scrap metal and making it readily available to steel producers. To improve its quality and make it more competitive with iron ore, more of the contaminants must be removed. This can be done by the process of shredding and magnetic separation which removes the most troublesome impurities. Another way to make scrap more competitive with iron ore would be to freeze freight rates. A third way to create a demand for scrap metal is to encourage use of the electric furnace in making steel.

Of the three techniques for making steel--the open hearth, basic oxygen, and the electrical furnace--the latter utilizes the greatest percentage of scrap metal. Today, however, the electric furnace accounts for less than 20 percent of all steel made.

It seems clear, then, that by popularizing the electric furnace method, removing more of the impurities in scrap metal, and rendering freight rates equal for competing metals, it would be possible to increase substantially the use of scrap metal in steel-making. However, lest I leave the impression that a fundamental reorientation of our demand for automobile scrap lies entirely in the matter of cooperation between car owners, dismantlers and scrap processors, I would advise a careful review of what we have learned through several studies which the Environmental Protection Agency has sponsored in the past three years.

State of the Art: Recycling Scrap Metal

The basis state-of-the-art report for EPA, was compiled by Midwest Research Institute, and entitled Salvage Markets For Materials and Solid Waste. It places in perspective the commercial recycling activities of six classes of materials: paper, ferrous metals, nonferrous metals, glass, textiles, and rubber. All of these are important elements in municipal solid waste. In the 1968-69 period, 190 million tons (172 million metric

tons) of these major manufactured materials were consumed yearly. In the same period, 48 million tons (43.6 million metric tons) of these same materials were recycled through the market. Recycled materials were classed as either (1) fabrication, (2) wastes, or (3) obsolete discarded products returned to industry for reprocessing. The average rate of recycling in the period was about 25 percent of consumption. Rates varied from a high of about 50 percent for copper and lead to a low of less than 5 percent for glass and textiles. The rate for iron and steel was just over 31 percent.

In answer to the question of why we cannot recycle a larger proportion of our waste, and thus relieve the burden on our system of storing or disposing of this material, the report concluded that the demand for scrap materials at the present time is limited, and scrap materials have to compete for a place in this market with virgin material sources whose use and processing have become part of the production system. Industry has been capitalized in reliance on these resources. Moreover, in a broad sense, scrap recovery techniques, acquisition, upgrading, processing and distribution have not changed significantly in the twentieth century. Meanwhile, the mining or harvesting, purification, upgrading and processing of virgin materials have made dramatic technological and economic strides forward in the past century.

Referring specifically to steel, the study concludes that a producer finds it cheaper to mine, beneficiate, and chip ore, to mine and transport fluxing materials, to produce coke from coal--which also has to be mined and moved, to produce pig iron from these materials, sometimes using oxygen extractive and air liquification plants, than to acquire, remelt, and reformulate steel scrap. In talking about abandoned automobiles, we are referring mainly to the problems of marketing steel hulks for scrap. In steel parlance, automobile scrap comes under the classification of "obsolete scrap," which means metal derived from products or structures that have completed their useful economic life, and are ready for recycling. Obsolete scrap must compete against "home scrap," which is scrap generated within the steel industry itself, and "prompt scrap," which is fabrication scrap resulting in industrial operations outside the steel industry.

While scrap usage in the steel industry as a percent of total metallics has been remarkable stable in the last 20 years, home scrap generation and use has been increasing at the expense of obsolete scrap. Home scrap obviously is more desirable because of its known characteristics; and simple economics dictates that wherever feasible all of it will be used within the steel plant. Although the steel industry continues to use substantial amounts of obsolete scrap, perhaps 60 percent of available obsolete scrap does not get used, and this includes large numbers of abandoned motor vehicles.

Research Needs Relating to Solid Waste Management

From all we have learned about salvage markets, EPA has concluded that what is needed next are comprehensive studies of possible incentives for increasing the demand for recycled materials. As I have already noted, Sec. 205 of the Solid Waste Disposal Act calls for such studies.

Greater knowledge also is needed concerning the disincentives facing the use of scrap and other secondary materials. Just getting underway in EPA are separate studies to include recommendations on the following: freight rate structures, to determine the cost basis and impact of differential rates between virgin and recycled materials; depletion allowances, to determine the implication of existing allowances for the use of recycled and recycled materials; recycling subsidies, to determine their possible effects on secondary materials industries; tax incentives, to determine their feasibility as means of stimulating secondary materials use; base cost data on selected product categories to help determine the effects of using varying amounts of secondary materials in lieu of virgin resources.

Other studies will be undertaken on possible packaging taxes or regulations, source separation as a means of recycling, and the environmental impacts of using virgin or secondary materials. It is already suspected that the use of recycled ferrous metals, paper and glass would actually reduce the so-called external costs to society of air and water pollution, and energy use.

Current Developments in Federal Legislation

While the studies are going on, and positions are being formulated, the States and local communities obviously cannot wait. The abandoned vehicles are there in increasing numbers, and something has to be done about it. Finding a way to encourage the owner to dispose of his car legally and properly rather than abandon it was the subject of sev-

eral bills introduced in the 92nd Congress, Senator Javits has proposed that each motor vehicle owner pay to the Secretary of Transportation a Motor Vehicle Disposal Fee of between \$25.00 and \$50.00, and affix to his vehicle a plate provided by the Secretary affirming that the fee has been paid. When the owner presents his vehicle to a licensed scrap processor, he will be eligible to receive a disposal payment equal to the fee paid. The licensed processor then will receive not less than \$1.00 nor more than \$5.00 for each car processed.

Bills also were introduced by Rep. McClure and Sen. Gurney to provide for the Secretaries of the Interior and HEW to make grants to States having approved plans to subsidize the cost of carrying out motor vehicle disposal programs. No action was taken on these bills for a number of reasons. With respect to those proposals which contemplate disposal fees, it is difficult to determine the price which will be high enough to offer a great degree of certainty that the car owner will dispose of his vehicle properly, yet low enough so as not to be a disincentive to purchase a new car. Legislation providing for Federal subsidies for State plans have the additional arduous task of accommodating the heterogeneous geographical and demographic characteristics of each State in calculating the fair Federal share.

Current State Legislative Developments

Several States have already initiated programs which deal with some of these problems. But most plans have been ineffectual in accomplishing their goals. The fundamental reason for lack of success is that the States lack the financial resources necessary to carry out such a program. Collection and disposal of junked cars is an expensive matter, both monetarily and otherwise. Costs are incurred in towing, utilization of city property for impounding yards, searching records and sending notices to owners or lienholders, and advertising and issuing of new titles. Titling and transfer laws are the biggest legal impediments in the actual disposal process. Much money and effort are required for a processor to obtain a certificate of title, and this procedure increases the time required to process an abandoned vehicle.

Several States have made progress in spite of these difficulties. Perhaps most noteworthy are Vermont, Minnesota, Alabama and Maryland, all of which have enacted innovative legislation. Maryland's new law, effective January 1, 1970, offers experience that may provide guidance to other States seeking solutions to the problem. Maryland's program is intended to be self-financing. To cover the cost of the program, the State has levied a \$1.00 surcharge on every title transaction. This brings in about \$650,000 a year. This goes into a special fund together with the proceeds of a \$5.00 assessment on dismantlers for each vehicle of more than 8 years old retained more than one and one-half years by the dismantler. The assessment is repeated every 6 months that the vehicle is retained thereafter by the dismantler.

Since this phase of the Maryland law went into effect on March 1, 1970, dismantlers have incurred a debt of some \$75,000. Funds collected are used to support bounty payments totalling \$10.00 per vehicle which is processed for scrap. This bounty payment is split between the dismantler and scrap processor in the case of vehicles going through both steps. The program has reported 80,000 vehicles destroyed as of January 1973, with payments of \$200,000 paid out to dismantlers and \$460,000 paid to scrap processors.

Other provisions of the law call for licensing dismantlers and scrap processors, and maintenance of records by them regarding their operations. Another phase of the program just getting under way provides that local governments will be offered bounties for every vehicle collected for dismantling or processing. The State estimates that a 30 day interval will be allowed between first identifying an abandoned vehicle and having it dismantled or processed for scrap.

Conclusions

Tentative conclusions this far suggest that the bounty program typified by the Maryland Motor Vehicle Disposal Act is serving to eliminate the filling-station-scale wrecking operations. Such facilities may hereafter concentrate on towing vehicles to scrap processing yards rather than holding them. The record-keeping provisions are mandating insurance companies to furnish ownership documents which previously were neglected. Better control of dismantlers and wreckers appears to be reducing car thefts. Dismantling operations as a whole, it is felt, will be upgraded. The inventories, which in themselves have frequently constituted an eyesore, appear to be better managed. The local police departments are gradually phasing themselves out of the responsibility for

abandoned cars. The cost of administering the program will not be known for several years because of its phased introduction.

In an effort to encourage the enactment and implementation of State legislation dealing with the abandoned vehicle problem, and to utilize existing recommendations, a workshop sponsored by the Council of State Governments, the Council on Environmental Quality, and EPA about a year ago. This workshop formulated a suggested State Abandoned Vehicle Act, relying heavily on the Uniform Vehicle Code. The main feature of this model, in contrast to suggested legislation published by the Council of State Governments in 1967, include new definitions of abandoned vehicles, freedom from ownership search and titling provisions for abandoned and inoperable vehicles of retail value of \$100 or less and 8 years or more old, and a range of suggested options for financing a comprehensive State program, and for disbursing the funds to encourage proper disposal or management of the abandoned vehicle. It is hoped that this model will provide some of the guidance needed by the States to enact laws which will put their programs on a sound and realistic basis.

In closing I want to reemphasize the major points of this discussion. Economically abandoned automobiles are a resource out of place. Environmentally they are a blot in our landscape. It is because of our abundance of natural resources and advanced technology that the United States has become such a highly developed country in such a short time. But our supply of resources is limited, and we cannot afford to misuse these resources if we hope to continue our rapid rate of development in the future. The expansion of resource recovery and recycling programs is going to require readjustment in our understanding of economic values. And all sectors of American Society will be called on to participate in the decisions that must be made, and the actions required to implement them.

REMARKS OF LEO GROSSMAN
Office of Environmental Policy
Federal Highway Administration

The responsibility for implementing the Highway Beautification Act of 1965 is vested in the Federal Highway Administration of the U.S. Department of Transportation. That legislation provides for payment to the States for 75 percent of their cost of screening or relocating junkyards which may be within 1,000 feet of the right-of-way of the Interstate and Federal-aid primary systems if the junkyard is visible from the traveled way and is outside of zoned industrial areas or unzoned areas of similar character.

These two road systems comprise one-sixth of the mileage of all roads and streets of our country.

The definition of junk and junkyards in the Act covers practically all types of solid waste materials which might be visible within the 1,000-foot roadside band and includes garbage dumps and sanitary land fills.

Insofar as junked and inoperative motor vehicles are concerned, more than three-fourths of them are stored in lots belonging to used-parts dealers, or auto wreckers as they prefer to call themselves. These junkyards are, by their very nature, environmental depressants. It has been estimated that they number more than 20,000 and are extremely important to our economy. We have prevailed upon all States, except two, to enact legislation to control the appearance and location of these and other types of existing and future junkyards adjacent to the Interstate and Federal-aid primary roads. This control consists of fencing and planting where it is feasible to do so, or of relocation or removal where it is impractical to screen.

Many dealers have fenced and screened their lots at their own expense because of pressures exerted by their neighbors.

Of course, the ultimate solution to the motor vehicle junk problem is the collection and recycling of the unsightly carcasses which result after the auto wreckers have cannibalized the vehicles or the collection of the comparatively few, but much more noticeable, inoperable vehicles which have been abandoned along highways or scattered over the adjacent countryside.

The motor vehicle junk problem has been studied by many Federal and private agencies and all agree that the solution is a matter of economics rather than technology. The production of steel and cast iron requires appreciable proportions of scrap. Percentages vary from 30 percent, for the basic oxygen furnace process, to 90 percent or more, for the electric furnace. The cost differential between the use of ore and the use of

scrap is very narrow and the actual ratio is more dependent upon the market price rather than the supply.

It is natural to ask, "What is the scope of the junk auto problem?" There are now more than 110 million registered autos and trucks traveling on our highways. Included in this number are the 11 million vehicles which were manufactured or imported this past year. To offset a portion of this growth, between 7 and 8 million vehicles have been going out of service every year. Although the mills and foundries routinely absorb large quantities of motor vehicle scrap, all authorities agree that there is a backlog of between 10 and, at most, 20 million junked vehicles. (Our own analysis leads us to believe that there are only about 12 million.) Almost 75 percent of these are known to be stored in auto wrecker lots awaiting the sale of used parts. Another 5 percent are stocked with scrap processors. The remaining 20 percent--3 to 5 million junked vehicles--are the major environmental and recycling problem, because of their wide dispersal.

The movement of the junked vehicle follows a definite cycle. The last owner trades for a new or used car--the inoperable vehicle is sold or given to an auto wrecker for used parts--the auto wrecker (or, in a few cases, and independent collector of abandoned or dispersed vehicles)--sells the vehicle to a scrap processor. The apex of the junked-vehicle pyramid is the scrap processor--about 1,200 of whom comprised 95 percent of the industry.

Not until a vehicle passes through the hands of the processor, does it lose its identity as junk and become scrap. The processor separates the various metallic components for various markets--steel, cast iron, copper, lead. The heavy ferrous parts--motors, rearends, chassis--have a fairly high and profitable classification--the body another. Depending on the processor, the body is either sheared into slabs, compressed into bales or bundles, or torn into shreds. There is a very ready market for all of the metallic components other than the sheet metal body. The body scrap sells at a much lower price per ton because of its non-ferrous contaminants--primarily copper--unless it has been processed through a shredder.

The shredder is a story in itself. These plants cost between one-half million and four million dollars each. Some of these can shred up to 100 automobiles per hour. Shredding means that they will tear an auto-body and its chassis into fist-size pieces. These pass over electric magnets which separate the ferrous components from the non-ferrous and non-metallic components. The equipment train includes an incinerator where glass, body fibers, rubber, and other combustible materials are removed. The shredded scrap commands a price of about 10 dollars per ton more than the baled metal, because of its greater purity.

There are more than 100 shredders in existence and they consume all types of metallic junk--not only motor vehicles--within a radius of 300 miles. Their combined locations cover more than 85 percent of the area of the United States--only a small section of the northern Rocky Mountain States are not served. Because of the bulk of the individual motor vehicles, the industry has developed portable flatteners which compress each vehicle to an 8 to 12-inch height so that flat-bed truck trailers can haul 25-30 vehicles per trip.

As might be expected, the market for scrap is limited to steel mills, electric furnaces, foundries, and foreign export. By far the greatest users are the steel mills, but they have their cyclical problems, too. Most mills are integrated--they own their ore, coal mines, and limestone quarries, all of which must be kept in operation to assure a constant source of supply. Most steel mills now produce their steel in so-called basic oxygen furnaces which discharge a batch of molten metal every 45 minutes as compared to eight hours for the obsolete open hearth furnace. These newer furnaces consume only 30 percent scrap as compared to 45 percent for the older process. Of this 30 percent, a higher percentage comes from so-called "home scrap" produced within the mill itself. Scrap from outside sources must be of higher grade than normally available from baled auto scrap to maintain quality control. Comparatively minute quantities of copper--more than 0.2 percent in the final product--can be disastrous.

The electric furnace now produces about 20 percent of our total steel production and it consumes more than 90 percent scrap. As quality control can be maintained in the course of steel making, in the electric furnace, it is much more flexible in its scrap type demands.

Cast iron and cast steel foundries are also heavy users of scrap but they tend to be very selective in the quality of the scrap they will purchase.

A fairly significant tonnage of scrap is exported from sources convenient to our sea-coast. This is also a fluctuating market and the heaviest buyers are Japan, Canada, Italy, Spain, and Mexico--in that order.

The use of scrap in the steel making cycle is rather peculiar. It is not economical to make steel without scrap, but the impurities in auto body scrap require scrupulous quality control to meet the buyers' specifications. Our analysis of data furnished by the Bureau of Mines would indicate that a typical ton of steel would theoretically contain only 4 percent of auto scrap. Insofar as the average scrap processor is concerned, only 21 percent of his production would involve auto scrap, disregarding the tonnage exported.

From an environmental and resource-saving standpoint it should be noted that each ton of ferrous scrap from any source is reported to replace one and one-half tons of ore, one ton of coal, and one-half ton of limestone. Considering the destruction of the countryside in the procurement of these raw materials, the cost of manpower and equipment in the mining operations, and the extra cost of transportation from the mines to the mills, it would appear that ferrous scrap should be in great demand. As a matter of fact, the relative cost of producing steel from the basic, raw product as compared to the greater use of scrap is so close as to depend upon the market price for scrap. The scrap processor's cost of converting junk to scrap is the determining factor. It has been said the 85 percent of his product has a ready market. It is the 15 percent--in which the baled and bundled auto-body scrap falls--which is their problem and ours. Although the electric furnaces, foundries, and export market consume appreciable quantities of scrap, it is the steel mills themselves which really determine the price. When steel production and sales are at a high level, the demand and price for purchased scrap rise to more profitable levels; we are in such a period now, both in our own national production and exports. Purchased scrap is moving very favorably. This condition is like the stock market, it can and does fluctuate from day to day.

Under normal conditions, however, the scrap price differential for junked auto bodies between that cost for which the scrap processor can profitably prepare the steel for disposal to the mills and what the mills or foundries are willing to pay for the low quality, contaminated body steel is too narrow.

In all too many instances--small but troublesome--the junk-car owner cannot give the vehicle away, even if he paid to have it removed. His only recourse is to use it as a trade for another car or to pull the license tags and other identification and abandon it. This is especially true in remote areas where the distance to a disposal site, auto wrecker, or scrap processor is too great to make the transfer worthwhile. In slum areas of our cities, motor-vehicle owners likewise cannot get anyone to take the inoperative vehicle off their hands except at a price. Again, abandonment is the only recourse.

It would appear that some form of incentive or bounty payment might remedy this condition. The following suggestions have been offered and tried in a few instances:

1. Each governmental unit might provide a free disposal site, as is sometimes done for solid-waste disposal of household and industry refuse.
2. States might enact legislation requiring purchaser of a new or used car to present evidence of legal disposal of his older vehicle--either by trade, sale to used-parts dealer, or scrap processor. In other words, he should present evidence of transfer of title.
3. When a car is registered for plates, the serial number should be entered into a computer for matching and memory retrieval. If the car is abandoned or stolen, last owner could be identified by the serial number.
4. Scrap processors should be credited with a depletion allowance for income tax purposes in the same manner and amount as allowed steel mills for ore, coal, and quarry mines.
5. Freight rates should be set by the ICC to enable scrap processors to compete with freight rates afforded steel mills in shipping ore from their mines.
6. Excise tax might be levied on auto manufacturers and importers. These vary from proposal that a one-percent excise tax be paid by manufacturer based upon manufacturer's sale price to flat fees ranging from \$25 to \$50 per vehicle. This would be placed in a nationally-controlled trust fund.
7. States should add \$15 to \$25 to their charge for titling new cars; this is to go into a State-controlled trust fund to be reimbursed at the time vehicles are finally junked.

8. States might increase their annual registration fee (tags) by nominal amount (\$1.50 suggested). This increase charge would be placed in a State-controlled trust fund to be expended as incentive payments to assure collection and recycling of junked or wrecked vehicles. (\$150 million/year)

The question about bonus or bounty payments is--is it needed?

The answer is a qualified "yes". The problems are--first--approximately 85 percent of the junked automobiles are now recycled without bounty payments. It is the remaining 15 percent which is the problem.

Second--if all of it were given to the final operating owner, there is no assurance that the used-parts dealer or repair shop purchasing it for parts will not dump it into an auto graveyard.

Third--since the last recognizable stop for the junked car is with the scrap processor, payment should be made to him to assure that the car is actually scrapped. The amount should be sufficient to make it attractive for the steel mills and foundries to substitute scrap for pig iron, plus administrative costs for processing.

Fourth--tonnage payment should be based on body weight--say 2,500 pounds per vehicle--as engine, transmission, electrical (copper) elements--move freely into the scrap cycle. Payment of say \$4 per ton to the scrap processor would be equivalent to \$5 per vehicle.

Fifth--scrap processors have repeatedly stated that they could handle all cars delivered to them if the mills would take them. With a \$4-per-ton bounty, they could sell their product to the mills and foundries at a discount of up to 20 percent--probably moving all that were delivered to them.

Sixth--hopefully, this would not displace other types of purchased scrap, but rather reduce the tonnage of raw ore, limestone and fuel.

Seventh--a trust fund derived from a manufacturer's tax or title tax, or increased registration fee yielding \$25 to \$35 per auto would enable payment of \$10 to last operating owner--\$10 to used-parts dealer for handling--and \$5 to \$15 to scrap processor to permit subsidy payment for disposal.

REMARKS OF JOSEPH P. MURPHY
Director of Motor Vehicles, District of Columbia

When President Nixon signed the National Environmental Policy Act on January 1, 1970, he said he was convinced that the 1970's must be the years when America pays its debt to the past by reclaiming the purity of its air, its water, and its living environment. There is a "now-or-never" feeling about the environment these days; and a peaceful revolution is in progress as this concern is expressed.

Even the cartoonists are expressing it. In Walt Kelly's comic strip called "Pogo" on March 6, 1970, one of the characters, Wolbat, says: "Just the same, he got his civil rights to breathe as he pleases. How'd you like to take a deep breath and wind up with a nose full of old bicycle sprockets?" And that just about sums up the situation as it applies to junked automobiles. The real problem is not just the junked vehicle; it is the abandoned vehicle. With 85 percent of the retiring vehicles being disposed of properly for salvage and recycle in the steel-making process, it is the remainder that causes the visible pollution.

When we start drafting legislation, in addition to providing financial incentives to induce owners to dispose of their vehicles properly, we must anticipate a great many other questions. For example, how do we discourage abandonment by owners? Once a car is abandoned, how do we provide for the vehicle's removal from the highways without compromising rights of owners and lienholders? Once removed from the highway and stored, how do we assure the entry of the vehicle into the scrap processing cycle? And once rapid removal is accomplished, how do we assure that the parts needed for the auto repair industry are made available? After the scrap processor receives a vehicle, how do we provide for processing without open burning of the vehicle to eliminate its impurities?

Legislation for Abandoned Car Disposal

Virtually all States, and many municipalities, have laws or ordinances dealing with abandoned vehicles. All are similar in the following basic provisions:

(1) Definition of "abandoned vehicle". These definitions usually include a time period. In our District of Columbia law, a 24-hour period is sufficient to create an abandonment if the other elements are present. In a bill which we are preparing for submission to the Congress, we will propose that this be changed to 48-hours, whether on public or private property.

(2) Authorization to remove. All of these laws provide authority to remove the vehicle. This procedure generally includes ticketing, and later towing away the vehicle by or under supervision of the police. Where a vehicle is apparently abandoned on public property, it generally is posted with notification that it will be removed by the police if the owner does not remove it within a certain time.

(3) Storage of removed vehicles. Provision for storage of vehicles following removal is a necessary part, and may be provided by either public or private facilities.

(4) Notification. Courts have ruled that when vehicles are picked up there must be some provision for notification of owners and lienholders. If these parties cannot be identified by actual notice, constructive notice must be given before disposal of the vehicle can be authorized.

(5) Disposal authority. Authorization for disposal is needed as a formal termination of the rights of owners and lienholders. In the law being prepared for submission to Congress for the District of Columbia, we are providing that if an owner or a lienholder fails within 20 days after notice to make a claim, their rights will be deemed waived. This is a little different from the approach taken in most States. Also, in order to expedite the disposal of non-saleable vehicles, we are proposing that where the administrator of the law finds that the vehicle is worth less than \$200 and is not repairable at reasonable cost, he may transfer the vehicle to a wrecker or scrap processor who, in turn, must agree he will not reconstruct the vehicle and sell it.

(6) Disposal procedures. All laws cover procedure for disposal. Most require disposal at public auction by public authority. Proceeds are first applied to pay for removal and storage costs. In our recommendations to Congress, we are asking for something unusual in that any person in possession of a vehicle may apply to the Mayor for authority to dispose of that vehicle. He may do so under those circumstances only to a wrecker or a scrap processor. In these cases, notice and disposal procedures would have to be followed just as where a governmental agency takes possession.

Clearing Motor Vehicle Titles

In discussion of the procedures for disposing of abandoned vehicles, there generally is some reference to titling problems. One of the recommendations we are making in the proposed D.C. bill is that if the vehicle is worth less than \$200 or is not repairable, the authorities can transfer title to a wrecker to processor without any formal title requirements. In the District of Columbia at the present time the police can remove vehicles from public areas only if parked for more than 24 hours. If they are salable, these cars can be sold at auction after 60 days notice, and the proceeds are turned over to the Treasury after deducting taxes, storage fees, and other charges. If the vehicle is on private property, the situation is more complicated. Notice must be given either to the Department of Economic Development, if it is on residential property, or to the Department of Environmental Services, if it is on commercial property. In such cases those departments enforce a nuisance statute. Inspectors make a report that the vehicle has been abandoned and represents a nuisance and health hazard. One week after notice has been given the vehicle may be removed, and a tax may be assessed, not against the owner of the vehicle but against the owner of the property. This obviously is an inequity which does not make much sense. Also, criminal penalties are provided, not against the owner of the vehicle, but against the owner of the property, who may be the unwilling host. You may be surprised to learn that at the present time revenue under these procedures exceeds expenses by \$100,000 a year, which is turned over to the U.S. Treasury.

Economic Incentives and Disincentives

In addition to "impound-and-sell" statutes, which are the usual form, there are other approaches which involve economic incentives and various types of disincentives.

Mention was made earlier of the President's Message on the Environment. At that time the President asked the Council on Environmental Quality to take the lead in recommending a bounty payment, such as has been adopted in Maryland. However, the Council, in its turn, concluded that none of the usual financial alternatives was practical. They reasoned that since 85 percent of the cars were voluntarily turned over to auto wreckers, you were putting a penalty on those people as compared to the 15 percent whose cars had to be enticed into the scrap processing facilities. Also, they were not persuaded that the demand for auto scrap would be improved by any such financial system.

Variations of the bounty proposal have been offered, but I see all of them presenting certain administrative and legal problems, some of which I will mention. For example, the collection of a disposal fee of \$25 to 50, to be deposited in a Motor Vehicle Disposal Fund in the Treasury, and as a vehicle passes from hand to hand the fee would be reflected in the price of the car. Well, you know what is going to happen in that case: the car market being what it is, the first owner is going to absorb that \$50.00, which will be paid at the end of the line to the scrap processor.

Another plan calls for an out-and-out Motor Vehicle Assistance Program, where the States would receive Federal grants. And there are other variations of this form of assistance.

In the 1968 recommendations on legislation by the Council of State Governments there is a recommended State Abandoned Vehicle Act. As with most other such acts, it is quite specific in its impound and sell provisions, but it contains only an outline of the financial incentives and other financial features of the program. In Sec. 12 of the act, for example, the State legislature is left to its own devices because there is so much controversy surrounding economic incentives and disincentives that the draftsman simply avoided the problem by leaving it up to the legislators.

Administrative and Legal Problems

Being an administrator, I place considerable significance on the administrative and legal framework of these laws. I think the constitutional basis for any of the strategies we have spoken about cannot rest easily on the traditional grounds of health, safety, and the preservation and enhancement of interstate commerce. There is relatively little activity in the courts on environmental law generally insofar as motor vehicles are concerned. I have found only one case dealing with abandoned vehicles.

Fines for abandoning vehicles, of course, may be grounded on the doctrine of common law nuisance, and also on the right of action for trespass. But these too are open to be challenged on the ground of equal protection of the law and the requirement of substantive due process in the classification of vehicles which are subjected to the penalties of the law. These issues may be raised in connection with the classification of certain units in the recycling process or the rights of lienors whose security interests are forfeited by the seizure of the vehicle.

There are a good many administrative problems that seldom are recognized in totalling up the cost of these programs. For example, there are a number of costs that are not covered by the fee charged. A wrecker has to report all vehicles in his inventory. The Motor Vehicle Administration of Maryland has 96 investigators who have to be sent out to visit these wreckers and verify their inventory. Cars must, of course, be checked by their motor numbers. Then, this inventory has to be placed in the State's computerized files. Here it will be used to compute penalty assessments and bounty payments. Then, by law every 6 months (or 10 months, under current legislative proposals) the computerized records have to be matched against the wreckers' inventories to determine whether penalties should be imposed.

How is this system to be kept up to date? When a wrecker reports his inventory, he surrenders to the Maryland Motor Vehicle Administration the certificate of title on cars coming into his inventory; the Maryland Motor Vehicle Administrator then gives the wrecker a four-part certificate of disposal. When the wrecker disposes of a vehicle to a scrap processor, he turns two over to the scrap processor, sends one to the Motor Vehicle Administration and retains one for his own records. Then, when the vehicle is demolished, the scrap processor certifies this fact on the certificate, and mails it

to the Motor Vehicle Administrator, who notes it on his computerized record, and remits the processor his payment.

Now, this is a great deal of paperwork for such a transaction; and none of this has been considered in discussing the cost of administration of the Maryland law. I have talked to the Administrator in Maryland about this law, and he reports that they are taking in about twice as much money as they are paying out in penalties. But this does not include hidden administrative costs.

Another aspect of the Maryland law involves the penalty, which, you recall, was only assessed against the auto wrecker who retained an abandoned vehicle longer than the time allowed by law. Recently the Maryland court decided an interesting case on this very issue, because the auto wrecker is penalized for retaining vehicles in his inventory beyond a prescribed time, and the scrap processor is not. Under the Maryland law the auto wrecker was given 18 months to get rid of a car which he acquired, and then every 6 months thereafter during which he retained it in his inventory he was penalized \$5.00. This law was challenged by an auto wrecker who objected to paying the penalty, arguing that it was discriminatory to penalize wreckers but not anyone else in the chain of recycling the automobile. It was, he said, a denial of equal protection of the law as protected by the Fourteenth Amendment. The trial court agreed with him. Wreckers and processors were, they felt, "similarly situated," and ought not to be treated differently in the statutory scheme. But the court went on to say that the testimony of the auto wreckers showed that the two segments of this industry operated in such a fashion that "it reflected rather overwhelmingly that it is in the best interest of wreckers to store old cars while the reverse is true of scrap processors."

One witness spoke of wreckers as generally being interested in the sale of used cars or car parts, whereas scrap processors are primarily concerned with destroying them. Scrap processors are required to maintain costly equipment in their business, and one witness in particular testified that he could handle one car every minute, and needed 500 cars a day in order to make any money.

The State motor vehicle administrator supplied some interesting evidence indicating that only 5 percent of the vehicles registered in the State are over 7 years of age. He also testified that once hulks were stored they quickly become infested with rodents and turned into health hazards.

Following the trial court's ruling in favor of the wrecker, this case was appealed to the Maryland Supreme Court of Appeals, and is reported in Motor Vehicle Administrator of Maryland v Vogt, No. 118, Sept. Term, January 11, 1973. The appellate court invoked several familiar principles in interpreting the equal protection doctrine, stating that as long as there was some reasonable basis for the classification the legislature does not have to make its classification with mathematical precision or avoid all situations where there is some inequality. Examining the facts to see if there was any reasonable basis of classification, the court said

Against the facial reasonableness of the statute and the testimony we have summarized, appellees did little more than bemoan their fate to the trial judge. To be sure the statute would tend to eliminate their parts business for vehicles over seven years of age, but in view of the testimony this does not portend the ominous results feared by them.

The court then went on to note the legislature had adopted a statute, effective July 1, 1972, that increased from 7 years to 10 years the age for disposal of a vehicle, and concluded by observing that the difference in classification which was under attack in the case

is such as will reduce the extensive storage of old automobile hulks, and thereby their damage to the ecology.

This is an interesting case, particularly for all who are concerned with environmental law. If other States adopt statutes similar to the one in Maryland, it is to be expected that there will be more instances where issues such as I have just reported will arise.

In the disposal certification proposal, which is not a financial incentive, but which has been suggested for the District of Columbia and other places, there is much that bothers me as an administrator. We have approximately 250,000 registered owners of motor vehicles in the District of Columbia. Every year we purge out of our department records about 25 percent of this number because of people who move and do not notify the

department of their departure. Other jurisdictions may not have as high a figure because their residential population is more stable; but his high mobility of the population presents a serious problem when the law requires personal notification of a vehicle owner. Under such a law we would have to have a substantial work force devoting all their efforts to keeping up-to-date lists which the law requires.

It would mean, moreover, that a person who fails to register his automobile would have to come to the Motor Vehicle Administrator and show that he had properly disposed of his automobile in a fashion acceptable under the law. If he did not do this, his name would be placed on file, and kept on a so-called "stop list" for from one to five years. Maintaining such lists would become an unconscionable burden.

One of the reports I read on this subject stated that if the Department of Transportation's Uniform Registration and Titling program was adopted this result could be avoided. I called some people in the Department of Transportation to inform me as to how it could be avoided, and they have no idea as to how to avoid titling problems.

There is a vandalism problem connected with stored vehicles. Where an abandoned vehicle has real value, the government has a responsibility for protecting the rights of owners and lienors in the vehicle's monetary value. The time spent between identification of an abandoned vehicle and the time it is taken into custody is crucial. In the case of vehicles abandoned in a public place, any acts of vandalism will decrease the vehicle's value for anything except scrap metal. When we put a ticket on a car notifying the owner that he has to remove his car within a certain time--in the District of Columbia it is 48 hours--this tends to identify the abandoned automobile to potential vandals. Anyone who lives in the District of Columbia knows how frequently people park their cars overnight and come out in the morning to find the wheels off. This happens even in lighted parking lots. How does it happen? Don't ask me. It happens--here, and in every other big city. And it raises a question of another area of possible governmental liability, and also the need for some type of summary procedure for obtaining custody of abandoned cars.

Another type of problem recently encountered in Maryland when a 1952 DeSoto, properly tagged and in good shape, became subject to seizure under the impoundment and sale law of the State. No one knows where his vehicle was taken, but he has a law suit against the State of Maryland; and this illustrates one aspect of summary procedures of disposal of which I spoke.

The last thing I would like to mention is the impediment of titles. In the District of Columbia we sought to do something about that by providing that where the vehicle is worth less than \$200 or is not repairable at a reasonable cost, the mayor can transfer the vehicle without any formal title requirements. This is important because owners are not going to take the trouble or go to the expense of coming down to the Motor Vehicle Department when they don't have a title, and pay \$5.00 for an old junker that is about ready to fall apart in any case. Rather than do this, the owner will abandon the vehicle. It's just that simple.

Therein lies the problem of which Pogo's friend spoke--waking up with a noseful of old bicycle sprockets.