Industrial societies cannot easily eliminate dependency on oil as an energy source, but they can mitigate the harmful results of fossil fuel addiction. Besides air pollution and major oil spills, a prime environmental cost of oil consumption is improper disposal of waste oil. Slow acting bureaucracies and red tape contribute to the problem and provide little incentive for proper regulation. In this article, the authors note some of the hazards of improper disposal of waste oil and describe Germany's attempt to alleviate the problem. The Federal Republic of Germany has developed a fairly efficient system of waste oil regulation which includes government financial support for proper disposal of used oil and tax incentives to use regenerated oil. They also note some of the law's dejects and suggest improvements. Although the idea of such regulation is known to other industrial nations, to date few have acted on it.

In 1968, with the passage of the Waste Oil Law, the Federal Republic of Germany established a program to assure safe disposal of waste lubricating oils. Private firms contract with a federal office to collect waste oils from anyone having more than 200 liters (about 53 gallons) who requests this service. The contractors' costs are covered by payments from the federal office based on the amount of waste oil dis-
posed of without contributing to pollution of the environment. More is paid for reprocessing the waste oil than for burning it. The payments are made from a fund which is supported by a special assessment collected from oil producers and importers. These suppliers pass this added cost along to users of oil at the rate of about one and a half cents per liter. The Waste Oil Law also provides for keeping records of oil disposal and for supervision of disposal methods. This Article describes the provisions of this law and the experience during its first two years in operation. The Article then offers suggestions for improving the German program and recommends adapting it in other industrialized nations.

I

THE ENVIRONMENTAL THREAT OF IMPROPER DISPOSAL OF WASTE OIL

Oil tanker collisions and oil drilling blowouts\(^1\) are spectacular events which introduce large quantities of petroleum into the environment. Such events are well recognized for their serious adverse environmental effects. A more insidious source of oil pollution exists in the daily discharges of oil which has been used but not consumed.\(^2\) These discharges multiply with the increasing use of oil.

The improper disposal of waste oils is a serious environmental and public health problem for several reasons. First, it places excessive demands on the level of dissolved oxygen in the water supply. The oxidation of one liter of oil dispersed in a water mass would deplete the oxygen dissolved in 400,000 liters of sea water.\(^3\) To emphasize this point, it is worth noting that shipping on the Rhine and its tributaries generates an estimated 10,000 tons of waste oil annually.\(^4\) Until recently, a large portion of this oil was discharged into these waters.

A second reason for concern about improper disposal of waste oil is that waste oil discharges into surface waters restrict the ability of natural organisms to break down wastes and impair the water's natural

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2. The Environmental Protection Agency has released figures indicating that sixty-seven percent of all oil pollution in the waters of the world is caused by used motor and industrial oil, while tanker accidents and normal offshore drilling operations contribute a combined total of only four percent of all the water pollution caused by oil. Zeldin, Oil Pollution (Audubon Black Paper No. 1), AUDUBON, May, 1971, at 99.

Continuing this calculation to its conclusion, one reaches the staggering figure of 114 billion gallons of water depleted of dissolved oxygen. See ZoBell, supra note 3.
re-aeration processes by covering it with films. These effects hinder the water's self-purification capacity. Fish suffocate from the resulting lack of oxygen, and the oil films themselves often cause the death of birds and plants along the water's edge.

A third reason for concern is that the breakdown of carbon compounds contained in oil is a very slow process. Since oil tends to spread out over a large surface area when discharged into waterways, the resulting disadvantages for public water supply are often profound. One milligram of waste oil in a quart of water makes it unpotable, and most people can smell and taste concentrations of less than .01 mg./quart. These concentrations cannot be removed by normal wastewater treatment facilities and are extremely costly to eliminate in public water supply plants. Furthermore, larger concentrations may severely impair the efficiency of wastewater treatment facilities so that oil pollution can be indirectly responsible for the introduction of other contaminants into the water supply. Both municipalities and industries which depend on public water supplies suffer the external social costs of improper waste oil disposal.

Even more significant than the potential economic loss is a fourth reason for concern: waste oil discharges into surface waters tend to introduce into the human diet lead and other poisonous substances, some of which may be carcinogenic. Phenols are themselves poisonous and during oxidation they may form peroxides. Other reactions in the water may produce naphtha acids which attack the nervous system. The polyatomic aromatics naturally occurring in raw petroleum have carcinogenic characteristics, but these are eliminated by refining processes so that waste oils usually would not contain them.
ever, such aromatics can be formed during combustion—they have been discovered in automobile exhausts, for example,\textsuperscript{14} and could thus appear in waste oils. Like radioactive materials, such poisonous substances can concentrate in aquatic organisms which constitute an important link in the food chain.\textsuperscript{15} Just as small concentrations of oil will often make water undrinkable, oil's characteristic taste and smell can make fish inedible.\textsuperscript{16} Fortunately, in many cases, the unpleasant taste resulting from small concentrations of oil deters people from consuming many of these substances.

Improper disposal of waste oil causes additional environmental problems for land,\textsuperscript{17} water, and air. If waste oil is spread on land, the soil becomes unsuited for cultivation.\textsuperscript{18} Micro-organisms in the soil have a limited ability to decompose many types of oils.\textsuperscript{19} Furthermore, the oil frequently filters into ground water aquifers,\textsuperscript{20} for example, from dumps, often spoiling them permanently.\textsuperscript{21} Finally, evaporation from waste oils deposited on land, or from films on the surface of water, contributes hydrocarbons to atmospheric pollution. The environmental and public health hazards enumerated above can be avoided by a comprehensive program of waste oil collection and disposal utilizing proper incineration or regeneration processes.

\textsuperscript{14} Hetche, \textit{Hygienische Fragen zum gesteigerten Mineraloelverbrauch (Health Issues in the Increased Use of Oil)}, 1960 \textit{GESUNDHEITS-INGENIEUR} 81.

\textsuperscript{15} J. Hopmans, \textit{supra} note 4, at 13. \textit{Cf.}, W. Zimmermann, \textit{supra} note 7, at B53-B54:

The presence of carcinogens in water has been proved by Borneff in a series of excellent experiments. Borneff's research on surface waters (middle-Rhine, Lake of Constance and other areas) involved the contents of benzpyrene, benzthrazene and dibenzanthrazene. These substances were found in water as well as in top-soil cultures and in dust collected from city streets. Statistical data show that adults drinking purified surface water take with the drinking water between 0.1 and 1 mg. carcinogene hydrocarbons per year, which, obviously to the most part, originate from oil-containing industrial waste waters. In tests on mice the carcinogenic result of benzpyrenes added to the drinking water was strengthened by detergents.

\textit{See} Borneff, \textit{Maeseufetutterungsversuche mit 3, 4-Benzpyren, Mineraloel und Tensiden (Mouse-feeding Experiments with 3, 4 Benzpyrene, Mineral Oil and Tensides)}, 147 \textit{ARCHIV FUER HYGIENE} 28 (1963).

\textsuperscript{16} Mann, \textit{Geschmacksbeeinflussung bei Fischen aus dem Hamburger Hafengebiet (The Influence on the Taste of Fish from the Area of the Hamburg Harbor)}, 1951 \textit{STAEDTEHYGIENE} 123.

\textsuperscript{17} For a good brief technical survey, see W. Zimmermann, \textit{supra} note 7, at B38-B54.

\textsuperscript{18} Knickmann, \textit{Pflanzenschaden durch Oelverschmutzung von Boden und Wasser (Damage to Plants by Oil Pollution of Soil and Water)}, 1960 \textit{UMSCHAU} 118.

\textsuperscript{19} \textit{See} Foster, \textit{Hydrocarbons as Substrates for Micro-organisms}, 28 \textit{ANTONIE VAN LEEUWENHOEK} 241 (1962).


\textsuperscript{21} \textit{See} A. KNEESE & B. BOWER, \textit{MANAGING WATER QUALITY: ECONOMICS, TECHNOLOGY, INSTITUTIONS} 86 (1968).
Thirty-five years ago Germany began encouraging the regeneration of waste oil by using governmental subsidies. The initial reason for this policy was to reduce national expenditures for importing raw materials and to assure the existence of the regenerating business. By 1953 Germany had switched from a direct subsidy to a tax preference, reducing the oil production tax by 15 Deutsche Mark (DM) ($3.75) for each 100 kilograms of regenerated oil.

In 1964 the Council of the European Economic Community (EEC) directed the member nations to unify their import duties on oil and harmonize their provisions governing the collection and harmless disposal of waste oil. In order not to violate Articles 92 and 95 of the Treaty of Rome in the process of revising its laws, the German federal government abandoned its tax preferences to regenerating businesses and offered financial assistance instead at the rate of 22.90 DM ($5.70) per 100 kilograms reprocessed.

The Netherlands objected to this measure, claiming it would distort competition and hinder commerce among the member nations. In investigating the objection, the EEC discovered that France and Italy gave tax preferences, as Germany had done until 1964. France's policy was to protect regenerating firms, partly to alleviate shortages of oil resulting from crises in the Middle East. Italy based its preferences...
on the principle that since oil production is taxed in the first instance, it is unfair to tax the regeneration of waste oil. The EEC also learned that the Netherlands did not collect a tax on regenerated oil products and that neither Belgium nor Luxembourg gave any kind of financial support to the reprocessing industry. These countries' provisions governing regeneration have remained essentially the same since 1964.

Meanwhile, in 1967 the Federal Parliament of Germany realized how expensive the pre-1964 tax preferences had been: in approving the budget committee's allocations to cover the new financial aid requirements, it was able to reduce the subsidy rate from 22.90 DM to 19.50 DM per 100 kilograms of regenerated products. It rejected the budget committee's suggested sharper reduction on the grounds that it would jeopardize the intended objective of environmental protection. Later, the annual increases in the amount of waste oil which seemingly disappeared caused the parliament to reconsider its environmental policy.

The Parliament learned that the subsidy was effective only in heavily industrialized areas where the collectors' transportation costs were relatively low. The less densely populated areas were inadequately serviced by waste oil collecting firms because, under the subsidy system, the collectors could refuse wastes which were unprofitable to reprocess or to collect. The financial assistance was likewise insufficient to encourage private enterprises to invest in the expensive equipment necessary.

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29. J. Hopmans, *supra* note 4, at 2. Italy asserts the applicability of the legal principle of *non bis in idem*, (literally, *not twice for the same*), a civil law principle corresponding to the common law's proscription of double jeopardy. Tax lawyers in some other EEC countries argue that the principle is not applicable in this situation. *Id.*

30. *Id.* at 1.

31. In October 1970, a written inquiry, No. 33/70, was sent to the Council of the EEC asking when the harmonization announced in 1964 would be implemented. No answer had been received by mid-April 1971.

32. J. Hopmans, *supra* note 4, at 3.

33. In 1963, 35,000 tons of waste oil were disposed of by unaccounted-for means, most likely in sand and gravel pits, garbage dumps, or into sewer systems. In 1965, the amount was 51,000 tons. Czychowski & Häring, _Directions for Indemnified Disposal of Waste Oil_, 1969 _WASSER UND BODEN_ 120. *Cf.*, W. Zimmermann, *supra* note 7, at B30:
The disposal of oily wastes by throwing them into drainage inlets, dustbins, on waste ground, on refuse-tips or directly into a nearby stretch of water is still thought to be the simplest and cheapest way of getting rid of them. The increasing amount of oil traces found in urban sewage water can only be explained by the fact that used oil is discharged into the sewer by households, industrial plant, garages, etc. In Baden-Baden (Germany) for instance, it has been ascertained that frequently up to 1 ton of oil flows from the sewer system in a 12-hour period.
necessary for either burning or regenerating. In addition, the public depositories and waste-incinerating facilities were inadequate. Local and state regulations prohibiting the dumping of oil-containing wastes into sewer systems were difficult to enforce, as were federal and state water law provisions prohibiting discharges of bilge waters and other harmful substances.

These circumstances indicated the need for a new approach. The result was the Altoelgesetz, the Waste Oil Law, of December 23, 1968, which repealed the federal financial assistance provisions and established a comprehensive collection and disposal system based on the principle that those responsible for a threat to the environment should bear the cost of resolving the problem.

III

THE 1968 WASTE OIL LAW

A. Special Reserve Fund for Free Collection of Waste Oil

The new Waste Oil Law creates a special federal reserve fund to absorb the cost of waste oil reprocessing. This fund is supported by a compensation tax of 7.50 DM ($2.10) per 100 kilograms, to be paid by all those who produce or import designated kinds of lubricating oils. Most of these suppliers pass this assessment along in higher prices to their customers at the rate of about one and a half cents per liter, thus bringing the financial burden of waste oil disposal to rest on those who are ultimately responsible for it. A few producers have so far absorbed the additional expense themselves in order not to jeopardize their competitive standing.

The Federal Office for Trade and Industry, an executive office of the Federal Ministry for Economic Affairs, administers the fund and deducts its administrative expenses from it. The rest of the fund is reserved for payments to collectors who obligate themselves in contracts with the federal office. Payments from the reserve fund cover collec-

34. Cf., recent articles arguing that tax incentives are also inadequate, e.g., Reitze & Reitze, Tax Incentives Don't Stop Pollution, 57 A.B.A.J. 127 (1971); Roberts, River Basin Authorities: A National Solution to Water Pollution, 83 Harv. L. Rev. 1527, 1530-37 (1970).
35. Czychowski & Häring, supra note 33, at 120.
36. Gesetz ueber Massnahmen zur Sicherung der Altoelbeseitigung (Law Concerning Measures to Assure the Disposal of Waste Oil), 1968 BGBI. I 1419. An unofficial translation of the law is provided in Appendix II, which may be referred to for the sections cited in subsequent footnotes.
37. Id. § 1(1).
38. Id. § 4.
39. Id. § 1(2).
40. Id. § 2(1).
tion, transportation, and disposal costs. The federal executive office pays 12 DM ($3.33) per 100 kilograms for reprocessing into lubricating oil, 10.20 DM ($2.83) per 100 kilograms for reprocessing into other substances, such as heating oils, and 10 DM ($2.78) per 100 kilograms for incineration. The law authorizes payments in addition to these normal rates for unusually difficult collection or disposal situations or for extra equipment made necessary by the law.

The collecting contractors can be private enterprises or public corporations. They must dispose of the waste oil without harming waters or soil and without contributing to air pollution—either by reprocessing the oil or burning it. They must collect all waste lubricating oils, including sludges and emulsions, from anyone within the districts for which they have contracted. Hence, anyone in West Germany, including West Berlin, is entitled to have any amount of waste lubricating oil over two hundred liters collected free of charge provided it contains less than ten percent foreign matter. This right is enforceable directly against the federal executive office. If a customer does not yet have two hundred liters, the contractor must prepare for later collection, for example, by leaving him a container. If the customer's oil contains more than fifteen percent foreign matter—such as water, lead, rust, combustion particles, additives, or metal rubbings—he must either pay the collector's charge for extracting the foreign materials or separate the pure oil from the dirty oil in order to reduce this charge. In either case the contractor is obligated to collect the oil. Failure to warn the collector that waste oil contains substances which may be dangerous to destroy creates liability for any accident which may result. The significant point, of course, is that the collection of used oil with ten percent or less foreign matter is free of charge.

B. The Supervisory System and the Penalties

The Waste Oil Law contains several provisions designed to assure thorough supervision and enforcement. In order to assure accurate measurement of the total amount of fresh oil, the importers and producers who are obligated to pay the 7.50 DM per 100 kilograms com-

41. Id. § 2(2)-2.
42. Id. § 2(3)-3.
43. Id. § 2(1). Depositing waste oil at approved places was allowed as a transition measure until December 31, 1970. For a discussion of the incinerating firms' difficulties in meeting air pollution emission limits, see text at note 68, infra.
44. Id. § 3.
45. Id. § 3(1)-2.
46. Id. § 3(4). The law allows the Minister for Economic Affairs to set the percentage of foreign matter at up to fifteen percent. Id. § 3(3)-2. He fixed it at ten percent.
47. Id. § 3(5).
OIL DISPOSAL IN GERMANY

Compensation tax are required to permit customs and other federal officials to examine all information pertaining to the implementation of the law. If a producer or importer refuses to provide the necessary information, the federal office may estimate the total compensation tax he owes.

In addition, the law authorizes government officials to examine inventories and to enter business facilities, offices, or other property. In the extraordinary case, where it is necessary to "prevent imminent danger to public safety and order," the authorized government official may inspect the living quarters of persons required to give information in order to examine business records and make inspections or tests. A producer or importer is not required to answer self-incriminating questions, however.

Both importers and producers must pay either oil duties or taxes to the Finance Ministry under other laws, thus providing a means of double-checking the accuracy of reported information. The Waste Oil Law directs the customs officials, who inspect all oil imports, to assist the federal office in determining the proper compensation tax for the Reserve Fund.

All collection contractors must keep a continuous record of the kind, amount, and means of disposal of all oils. This rule also applies to any other establishment which may or will in fact generate over 500 kilograms of oil which, due to excessive impurities or for other reasons, is not eligible for free collection. Any establishment responsible for keeping these records must show them to state government supervisory officials and give them any other information requested pertaining to disposal. The same provisions exist for investigating uncooperative collectors as exist for producers and importers. If a business can be adequately supervised by other means, however, such as by examination of its oil tax payment records, it may apply for an exemption from the record-keeping requirement. If a person has no waste oil other than that which must be picked up free by a collection

48. See note 38 and accompanying text supra.
50. Id. § 5(4).
51. Id. § 5(2).
52. Id. § 5(3).
53. Id. §§ 4(2), 4(6).
54. Id. § 6.
55. The federal post office and railways, as well as military installations, are exempted from the duty to keep records. Id. § 8(1)-2.
56. Id. §§ 7(1), 7(3).
57. Id. § 7(2).
58. Id. § 6(1)-2.
contractor, he need not keep such records since it is assumed that he would have no reason to dispose of his oil illegally. Those who do not maintain the required records, who refuse to produce requested information or records, or who do not permit tests, oil samples, or inspection of business records by authorized officials may be fined up to 10,000 DM ($2,778) per violation. 59

In addition, to protect against unwarranted probing expeditions, the Waste Oil Law provides penalties for breach of professional secrecy. Information gained from waste oil disposal supervision cannot be used in a tax collection proceeding. 60 Furthermore, anyone who divulges trade secrets which he discovered during the process of supervision is subject to fine and up to two years' imprisonment. 61

C. The Waste Oils Covered by the Law

The waste oils covered by the law are defined as "used mineral oils and used liquid mineral oil products as well as mineral oil-containing wastes from storage, business and transportation receptacles." 62 Liquid mineral oil products include diesel or internal combustion fuels and heating oils. Technically, gasoline is not included, but some is unavoidably collected. Oil-containing wastes are produced, for example, by motors, engines, compressors, transmissions, cylinders, axles, transformers, and cable or circuit breaker insulations. The law's definition of oil wastes encompasses deposits which result from cleaning heating and fuel oil tanks or oil separators. 63 Although oily bilge water from river boats must be collected free of charge, 64 the discharge of bilge water at sea remains an unsolved problem.

IV
TWO YEARS' EXPERIENCE UNDER THE LAW

The experience under two provisions of the Waste Oil Law provides a good foundation for a brief discussion of the first two years of the law's operation. These two provisions are that the Minister for Economic Affairs may alter both the payment rates and the compensation tax rate. 65

59. Id. § 10.
60. Id. § 7(4). The constitutionality of such provisions is currently being debated within governmental circles in Germany. The Minister of Finance has recently recommended that all such provisions be repealed. Interview with Mr. Kruse, supra note 23.
61. Id. § 9.
62. Id. § 3(2).
63. Czychowski & Häringer, supra note 33, at 121.
65. Id. §§ 2(3), 2(4).
Both the regenerating and incinerating industries argued strongly for an increase in payment rates, commencing in 1971, which was the first opportunity for an increase allowed under the law. The Ministry responded by requesting an examination of the complete records of the enterprises involved. The incinerators' records indicated that those which burned liquid- and solid-containing wastes separately made a profit while those which burned the wastes together did not. On balance, the Ministry decided that no change in the payment rate for incineration was necessary. Meanwhile, the regenerating refineries have not yet presented their books, but have ceased their demands for higher payment: one can reasonably conclude that their profits are sufficient to create a fear that the Ministry might reduce the payment rates rather than increase them. Refineries, after all, can sell their reprocessed end products to help cover their costs.

At the beginning of 1969, it was generally thought that the compensation tax rate of 7.50 DM per 100 kilograms would be insufficient to support the Reserve Fund. In fact, that rate has proved ample. So strong was the fear among producers and importers that the rate would be increased by amending the law that some of them purposely reported and paid for more oil in 1969 than they actually had produced in order to avoid the expected rate increase in 1970. The Ministry had no legal basis for investigating what the producers' end-of-1968 inventories actually were, because the law did not become effective until January 1, 1969, and thus could not verify these exaggerations. Ultimately, since the tax rate did not increase, only the firms involved in the over-reporting scheme lost.

When the law took effect, there were eighteen refineries equipped to regenerate waste oil and three or four incinerating enterprises. Although the number of incinerating plants increased to eight by the end of 1969, most of that year's total payments went for reprocessing. In 1970 the ratio of reprocessing to burning was five to one, but the incinerators had gained in their share of total payments received. No one requested payments for leaving waste oil at approved depositories, although a small amount was so deposited. By December 1, 1970, there were seventeen contracting refineries and ten incinerating businesses with total yearly disposal capacities of about 350,000 and 100,000 tons respectively. More than three-quarters of these are private enterprises.

66. The information in this section was largely provided by Dr. Jochen Krüger of the Ministry for Economic Affairs in an interview, in Bonn, Dec. 28, 1970.
67. See Appendix I, infra. The information was obtained in the interview with Dr. Krüger, supra note 66. The table comprising Appendix I, infra, was compiled by the authors.
The federal office has arranged for more than one collector to be responsible for an area, with the result that collectors have been forced for competitive reasons to lower the charges they initially announced for collection of oil containing more than ten percent foreign substances. Indeed, competition for collecting clean waste oil is so intense that one hears reports of collectors paying to take it away, rather than merely collecting it without charge.

The incinerators are equipped to burn solvents, acids, lacquers and other substances which present disposal problems; however, harmless disposal of the oil has been more difficult for the incinerating plants than for the refineries, which can regenerate the oil by chemical processes that do not emit air pollutants. Initially, it was thought that burning the waste oil at temperatures of 1,200 degrees Centigrade would melt all combustion particles and cause them to run harmlessly down the side of the incinerator. Tests have shown, however, that some of the incinerating plants' emissions regularly exceed applicable emission limits. Since air-pollution control authorities carefully observe such plants, incinerating firms whose waste oils frequently cause such excursions will either have to install expensive electrostatic precipitators or face fines and possible shutdown for violating the air pollution laws. The federal office has promised to increase the payment rates to firms which have encountered this difficulty in order to ameliorate a high investment in control devices.

Some incinerating enterprises attempted to increase the subsidies paid to them by more devious means. Clean heating oil is normally used to start and warm up the incinerators to their effective temperatures. Instead of piping the clean heating oil through the special, unmetered pipe, the enterprises pumped this heating oil through the metered pipe which recorded total tons of waste oil burned. Had the federal office not discovered this practice, these incinerating firms would have received unwarranted payments for counting the heating oil as waste oil and would have thereby reduced their operating expenses. Since there was no way of distinguishing meter records of waste oil from meter records of clean oil, the Ministry for Economic Affairs instituted proceedings to recover all 1969 payments made to the firms involved.

The federal administration of the Reserve Fund is inexpensive. Where, in the Federal Republic of Germany, federal laws are administered by state officials in the various states, the need for extensive federal supervision is eliminated. After two years of operation, only 1.7

68. These processes, however, do produce wastewaters which must be treated. So far, the refineries have been relatively successful in meeting the effluent standards imposed by state water officials.
percent of the fund's total income of 81,200,000 DM (about $22,555,500) had been used for administrative costs. Only nineteen persons—three officials and sixteen chemists, technicians, drivers, and laborers—are directly involved with administering the Waste Oil Law. However, this administrative system has its disadvantages. Nearly two and one-half years after the law became effective, some states had not yet named their supervisory personnel. Because of this, and because the Ministry for Economic Affairs first wished to observe the operation of oil collection and subsidy payments, it failed to provide the necessary blank record books, which are crucial to state supervision of waste oil disposal. It is expected that this impasse will be broken in 1971.

Representatives of industry have complained that the Waste Oil Law does not provide for payments to individual plants for the disposal of their own oil. The possibility of including such provisions was discussed and rejected by those who drafted the law. They reasoned that the money and supervisory personnel were inadequate to police effectively the many disposals and that greater efficiency and safety could be achieved by concentrating disposal in a few installations. An industry can dispose of its own oil if it agrees to be responsible for a collection district and maintain complete disposal records—an operation which, so far, only one company has been willing to undertake. Be-

70. The states have excused their tardiness by arguing that it is pointless to select supervisory officials before the industry record books that they are to inspect become available.
71. Oil industry representatives (from the Mineraloelwirtschaftsverband) made several attempts to persuade representatives of the Interparliamentary Working Center, the Federal Ministry for Economic Affairs and the Federal Parliament itself that the collection system embodied in the draft Waste Oil Law should be changed.

At the outset the oil representatives argued that regenerating waste oil should not be encouraged as a matter of public policy at all because the availability of re-processed products would reduce the demand for the importation and production of fresh oil. Only a few countries, however, are still reluctant to prefer protection of public health and the environment over insuring the health of the oil industry or the build-up of raw material stores, and Germany is not one of them.

Oil representatives next argued that the people who have waste oil should pay to leave it at service stations or have it collected. The proposed system was unfair, they said, because it would make the oil producers and importers bear the costs of collection and disposal rather than those who actually use the oil. The response to this argument was that nothing would prevent the oil companies from passing along the expense of the compensation tax in the form of higher prices for their products, and that experience had indicated that a system that relies solely on people consciously bearing the effort and expense of disposing of their waste oil is inadequate. Furthermore, it would be administratively impossible to collect the users' payments for the Reserve Fund from thousands of service stations and collectors. See File No. II/642 at the offices of the Interparliamentary Working Center, Adenauerallee 214, 53 Bonn, Federal Republic of Germany.

72. Kruse, supra note 22, at 11.
cause no insurance company will insure the risks involved, the consequent liability for any damage the firm causes in disposing of the oil has deterred many firms from assuming such a contract for a district.

V

A PRELIMINARY ASSESSMENT AND SOME SUGGESTIONS

Before 1968 much waste oil remained unaccounted for in West Germany. The impact of the Waste Oil Law and its record-keeping system is not yet fully evident, although it is known that 30,000 more tons of waste oil were disposed of properly in 1970 than in 1969. It is still too early to determine precisely the effect it has had on the environment—Germany's surface and ground waters and soil. Hopefully, as the supervision system is implemented, the degree of reduced damage to the environment should become clearer. Meanwhile, progress is needed toward reducing loopholes in the system through which oil wastes can escape unchecked.

Even with complete supervision under the Waste Oil Law, the law cannot assure complete and accurate reporting for a certain amount of waste oil, such as that which is reused or illegally dumped. Two-cycle boat engines burn a quantity of waste oil; some industries reuse oil for heating or lubricating purposes. Dumping oil from boats on inland lakes and rivers is prohibited by Germany's federal and state water laws, but enforcement is difficult. Moreover, it is nearly impossible to prevent the private citizen from dumping the oil he drains from his car motor into a ditch under cover of night.

Two of the four loopholes mentioned—industrial reuse and burning in two-cycle engines—pose little threat to the environment except to the degree that they cause air pollution or contribute to oil in bilge water. To render bilge water disposal harmless requires more organi-

73. Czychowski & Häringer, supra note 33, at 120. Cf. Häringer, Gefährliche Verunreinigung der Gewässer durch Mineralölabfälle und ähnliche Stoffe (Dangerous Pollution of Waters by Oil Wastes and Similar Substances) 1968 KORRESPONDENZ ABWASSER 1.

74. Not all of this increase can be attributed to an increase in consumption. In 1970, payments for safe disposal of waste oil were made for nearly 30,000 more tons than in 1969. By no means can all of the increase be attributed to expanded use of oil. See Appendix I, infra.

75. Of particular concern is Lake Constance, which is the major source of water supply for cities as far away as Stuttgart.

76. As an inadvertent defect in a system which promotes the regeneration of waste oil, service stations are prevented by their contracts with the large oil companies from selling regenerated oil. A consumer, however, can save up to half the price of his new motor oil by buying reprocessed oil in a department store rather than paying for fresh name-brand oil at a service station.
zations to finance collection boats and other facilities, more effective patrolling by water protection police, and increased efforts to dissuade boat captains from taking the convenient course of simply pumping bilge overboard.

 Preventing the private citizen from discarding his used motor lubricating oil into a ditch is a more difficult problem. Public exhortations to his civic conscience and closer police surveillance may help, but in themselves are probably insufficient. The federal office might publicize more widely that anyone who calls a collector is entitled under the Waste Oil Law to receive a receptacle. Perhaps it would be advisable to require oil companies to permit the sale of regenerated oil by their franchisers. This would enable the private citizen who wishes to buy the cheaper reprocessed oil to have his oil changed at a gas station, with proper collection facilities, rather than having to do it himself at home.

 In order to achieve the reduction of improper disposal of waste oil to near zero, it may be necessary to amend the Waste Oil Law's provision which now permits anyone to dispose of up to 500 kilograms of oil annually without having to account for it. Similarly, it may prove realistic to spot-check those for whom collection would be free to determine their actual disposition of waste oil.

 At first other EEC member nations expressed little interest in Germany's new waste oil disposal system. Recently, however, representatives from both France and the Netherlands have asked about it in sufficient detail to indicate they are considering the adoption of similar programs in their countries.

 The principles of the system need not be restricted to Europe's crowded circumstances. Experience in the United States indicates several unsound practices. About forty percent of the 1.2 billion gallons of lubricating oil drained from American autos annually is reprocessed. Twenty percent is unaccounted for. The remainder is disposed of in ways harmful to the environment: use as road oil to kill weeds and control dust, use by farmers to oil hogs as a pest control or skin curative

 77. A special cooperative association collects bilge water from the 8,000 boats on the Rhine by transferring the bilge water to a refinery for reprocessing and shares with the refinery the payments it receives from the federal office. Similar arrangements are being made for other rivers. See J. Hopmans, supra note 4, at 25-26, app. IV.

 78. Cf. note 76 supra.


 80. Interview with Mr. Kruse, supra note 23.


 82. Rainwater runoff washes some of this into the nation's surface waters. Id.
measure, dumping into sewers, dumping onto the ground, or burning. Since a small amount of waste oil will easily create a costly slick, it is unfortunate that the United States has not yet found the available means to support an adequate collection and disposal system.

The cost ratio of environmentally safe disposal to unacceptable disposal is one to two hundred.

In 1970, Maine’s legislature adopted a partial cure, the Maine Coastal Protection Fund, a “nonlapsing, revolving fund” available for use by Maine’s Environmental Improvement Commission in supervising the transfer of oil from tankers and in inspecting the facilities used in the transfer and subsequent storage of the oil. The commission is authorized to license annually all “oil terminal facilities” for operation, the license fees, as well as fines and other charges collected under the law, are credited to the fund. The license fee is one-half cent per barrel of oil or petroleum products transferred, to be “paid monthly on the basis of records certified to the commission.” The fund covers

83. Given the porous nature of skin, it is reasonable to assume that the toxic metals found in oil will eventually find their way into the food supply. The Food and Drug Administration should be concerned.

84. Dumping into sewers creates problems, such as fires and fouling of the operation at sewage treatment facilities. Environment Action Bulletin, Apr. 17, 1971, at 2.

85. Oil dumped onto the ground, as in city dumps or open areas, eventually makes its way to streams, lakes, and fields.

86. The U.S. federal government has exacerbated the problem: its red tape in labeling procedures has forced some refineries out of business. Also, free pickup service has declined. Environment Action Bulletin, Apr. 17, 1971, at 2. Besides federal failure to act, few states have initiated control programs. Maryland is one of the few states that has begun to move toward regulation. The Maryland public health engineers have issued a report recommending the establishment of a system for collection, transportation, refining or reprocessing, and reuse of waste oils. 2 BNA Environment Rep.—Current 295 (1971).

87. The ratio stated is offered by Harold Bernard, a section chief of the Federal Water Quality Office of the Environmental Protection Agency.

One-hundred gallons of oil can easily form a slick in a river that will require significant efforts to clean up, . . . [C]leaning up such a slick may cost $1,000. That’s $10 per gallon for a waste product that costs about five cents a gallon to dispose of in an acceptable manner [picked up by a used-oil truck]. Environment Action Bulletin, Apr. 17, 1971, at 2.


89. Id. § 545. An oil terminal facility is defined as “any facility of any kind and related appurtenances, located in, on or under the surface of any land or water, including submerged lands, which is used or capable of being used for the purpose of transferring, processing or refining oil, petroleum products and their by-products, or for the purpose of storing the same, but does not include any facility used or capable of being used to store no more than 500 barrels, nor any facility not engaged in the transfer of oil, petroleum products or their by-products to or from tidal waters of the State.” Id. § 542.7.

90. Id. § 551.

91. Id. § 551.4.
the commission's administrative and personnel expenses and equipment costs, as well as the costs of oil spill clean-up, third-party damage claims, and state insurance. 92

Although Maine's law is primarily an example of a response to the threat of oil spills,93 it admirably implements the principle that those responsible for a threat to the environment should bear the expenses for disposing of the threat. Unfortunately, although the law's definitions encompass the problem of waste oil disposal,94 facilities not engaged in the transfer of oil to or from the State's tidal waters are not covered by the law. 95 This means there is no comprehensive supervision to enforce the law's outright prohibition of discharging oil or petroleum products into coastal waters or lands or inland streams.96

Similar ineffective blanket prohibitions caused Germany to create its present system of contracting with waste oil collectors, assigning them districts where they must pick up normal waste oil without charge, and paying them for its safe disposal from a fund supported ultimately by the users of oil. These principles of self-financing, comprehensive and mandatory collection, payments for harmless disposal, and thorough supervision are workable in solving Germany's waste oil disposal problem, and appear well-suited for application to the waste disposal problems of the American states as well.

92. Id. § 551.5.
93. Id. § 541.
94. Oil, petroleum products and their by-products, discharges of which are absolutely prohibited, are defined as "oil of any kind and in any form including, but not limited to, petroleum, fuel oil, sludge, oil refuse, oil mixed with other wastes, crude oils and all other liquid hydrocarbons regardless of specific gravity." Id. § 542.6. "Discharge" means "any spilling, leaking, pumping, pouring, emitting, emptying or dumping." Id. § 542.4.
95. Such facilities do not fall within the definition of "oil terminal facility." See note 89, supra.
96. The discharge of oil, petroleum products or their by-products into or upon any coastal waters, estuaries, tidal flats, beaches and lands adjoining the seacoast of the State, or into any river, stream, sewer, surface water drain or other waters that drain into the coastal waters of the State is prohibited. ME. REV. STAT. ANN. tit. 38, § 543 (1970).
APPENDIX I


January 1969—December 1970

<table>
<thead>
<tr>
<th>Income</th>
<th>Percent of Income spent for Safe Disposal</th>
<th>Payments for Safe Disposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1969 39,200,000 DM</td>
<td>1.2%</td>
<td>For Reprocessing: 23,000,000 DM (191,000 tons)</td>
</tr>
<tr>
<td>1969</td>
<td></td>
<td>For Incinerating: 625,000 DM (6,625 tons)</td>
</tr>
<tr>
<td>1969</td>
<td></td>
<td>For Extra Costs: 150,000 DM</td>
</tr>
<tr>
<td>1970 42,000,000 DM</td>
<td>1.7%</td>
<td>For Reprocessing: 22,800,000 DM (189,000 tons)</td>
</tr>
<tr>
<td>1970</td>
<td></td>
<td>For Incinerating: 3,800,000 DM (37,800 tons)</td>
</tr>
<tr>
<td>1970</td>
<td></td>
<td>For Extra Costs: 370,000 DM</td>
</tr>
</tbody>
</table>

Notes:
1. From assessments paid by approximately 2,000 producers or importers of oil.
2. This percentage represents the aggregate expenses, salaries, supplies, etc. of the total income of the fund to date.
3. Excluding 11% turnover tax (Umsatzsteuer), which under German law must also be paid to the disposers from the reserve fund because the payments are made for services rendered.
4. $ 1 = 3.6 DM.
5. Extra costs include, in addition to increased payments for especially difficult collection and disposal situations, contributions to disposers toward the price of installing specially developed devices which collect samples of the waste oil disposed of. These samples form the basis, after laboratory testing, for the payments they receive.
6. As explained in the text, incinerating waste oil did not get under way until late 1969, thus the large increase in 1970 tonnage.

APPENDIX II

Law Concerning Measures to Assure the Disposal of Waste Oil
(Waste Oil Law)
of 23 December 1968 (I Bundesgesetzblatt 1419)
(translated by Author)
The Federal Parliament has passed the following law:

Part One: The Economical Assurance of Waste Oil Disposal

§ 1 Reserve Fund
(1) To assure the economical disposal of waste oil, a special federal fund is created with the name "Reserve Fund for Assuring Disposal of Waste Oil" (Reserve Fund).
(2) The Federal Office for Trade and Industry (Federal Office) is responsible for administering the Reserve Fund. The costs of administration are to be paid from the fund.

(3) The fund may otherwise only be used for payments according to § 2 (1) of this law.

§ 2 Purpose

(1) Trade and other economic enterprises as well as public-law juristic persons located within the jurisdiction of the law which dispose of waste oils collected from others according to § 3 (3) may receive continual payments for those costs not otherwise covered, if the waste oils are disposed of without harm to waters or soil and if air pollution, from which the general public and the neighborhood should be protected, does not arise. The Federal Minister for Economic Affairs, with the agreement of the Federal Minister for Health Affairs and in consideration of economic factors, shall determine by regulations what disposal methods, including regeneration, and what minimum level of continual payments may be used.

(2) The payments will be made by the Federal Office according to guidelines established by the Federal Minister for Economic Affairs. These guidelines should especially insure that:

1. the recipients of the payments obligate themselves to collect the waste oils according to § 3 in districts determined by the Federal Office or to prepare for later pick-up;
2. collection and transportation costs are part of the disposal costs;
3. in the payment rates for the individual disposal methods, the costs caused by collection conditions of above-average difficulty shall be specially compensated;
4. the payments at most correspond to the unincluded costs which on the average arise for an enterprise of the same kind;
5. payments for regenerated oil products made from waste oils (re-refined products) are to be paid back insofar as the products are exported to other member nations of the European Economic Community;
6. the requirements of the Reserve Fund are to be kept as low as possible under the previous principles.

(3) The payment rates established by the guidelines shall remain unchanged for the first two years after this law becomes effective; thereafter they may be changed yearly at the beginning of a calendar month after six months prior notice.

(4) The Federal Government shall report to the Federal Parliament on the activity of the Reserve Fund by the 31st of March of every third year, for the first time on March 31, 1972, especially on the possibilities of a reduction of the continued payments (§ 2(1)) and the compensation tax (§ 4 (2)).
§ 3 Collection of Waste Oil

(1) Those within the area of validity of this law who possess waste oils may require of the Federal Office that:

1. their waste oils be collected in quantities over 200 liters, insofar as the necessary facilities for the collection and harmless disposal of waste oil exist;
2. for amounts less than 200 liters, later collection will be provided for.

(2) Waste oils within the meaning of § 3 (1) are used mineral oils and used liquid mineral oil products as well as wastes from storage, business and transportation receptacles containing mineral oil.

(3) Waste oils shall be collected free of charge according to § 3 (1). The Federal Minister for Economic Affairs is empowered to issue regulations concerning:

1. the identification and measurement of the collected materials;
2. the permissible proportion of foreign substances, which may not exceed fifteen percent.

(4) Quantities of foreign substances in excess of the permissible proportion (§ 3 (3) Number 2) shall be picked up for a fee. The fee shall correspond to the price list filed with the Federal Office by enterprises obligated to collect waste oils.

(5) Those possessing waste oils remain liable for harm caused by failure to notify others of foreign substances in the waste oils.

§ 4 The Compensation Tax

(1) The Reserve Fund shall be supported by a compensation tax.

(2) The following dutiable goods

1. lubricating oils from Number 27.10 - C - III of the customs tariff schedule;
2. gas oils from Number 27.10 - C - I of the customs tariff schedule, to the extent they are used as lubricating oils;
3. greases with their heavy oil components;

are all subject to the compensation tax insofar as they are subject to the compensation tax insofar as they are subject to the oil tax according to the Oil Tax Law of 1964 as published on 20 December 1963 (I Bundesgesetzbblatt 1003) and last amended by the Law Amending Penal Provisions of the Federal Tax Law and other Laws of 10 August 1967 (I Bundesgesetzbblatt 877). The compensation tax amounts to 7.50 Deutsche Mark per 100 kilograms of dutiable goods. The Federal Minister for Economic Affairs is empowered to reduce the compensation tax rate by regulation to the extent that the requirements of the Reserve Fund allow.

(3) The liability for the compensation tax arises when the oil tax liability for the dutiable goods becomes unconditional.

(4) The compensation tax is payable by the person liable for the oil tax.
(5) If dutiable goods are withheld or withdrawn from customs supervision the compensation tax is due immediately. Otherwise the person liable for the compensation tax must pay the amount which has accrued during the course of a calendar month no later than the 10th of the second month following without being requested to do so.

(6) The compensation tax is collected by the Federal Office. The Federal Minister for Economic Affairs is empowered to issue by regulation the required provisions concerning the levying and collection of the compensation tax. Customs officials shall provide the Federal Office with the information necessary for the administration of the compensation tax and shall make the required documents available to the Federal Office.

§ 5 Information

(1) The person liable for the compensation tax must furnish the Federal Office the information and documents needed for the implementation of this law and the regulations issued under it.

(2) Employees and agents of the Federal Office and employees of the customs administration are authorized within the scope of § 5 (1) to check dutiable goods, to enter property, business installations and offices, and, for the prevention of imminent danger to public safety and order, also the living quarters of the person required to furnish information, to make inspections and tests there and examine business records of the person required to furnish information. The basic right of Article 13 of the Constitution concerning the inviolability of a residence is to this extent limited.

(3) The person required to furnish information may refuse to do so for questions whose answers would expose himself or one of the relatives listed in § 383 (1) Numbers 1-3 of the Civil Procedure Law to the danger of criminal prosecution or a proceeding under the Law Concerning Violations of Regulations.

(4) If a person required to provide information refuses to furnish information or relevant documents according to § 5 (1), the Federal Office may establish the conclusions necessary for determining the compensation tax by way of estimates.

Part Two: Supervising the Location of Waste Oil

§ 6 The Duty to Keep Records

(1) Trade and other economic enterprises must keep a record book for each business in which at least 500 kilograms of waste oils within the meaning of § 6 (2) accumulate or in which a yearly accumulation of waste oils of this amount may be reckoned with. The same applies to trade and other economic enterprises which accept at least this amount yearly of waste oils of this kind. The official responsible under state law may upon application

1. approve centralized maintenance of records in a main office if the supervision of the whereabouts of the waste oils will not be thereby disadvantaged;
2. relieve one of the duty to keep a record book if, because of its nature and management, the enterprise can be adequately supervised without a record book.

(2) Waste oils within the meaning of this provision are those substances named in § 3 (2), insofar as

1. their collection is not required under § 3 (1);
2. they are mixed with foreign substances whose amounts exceed the permissible proportion under § 3 (3) Number 2.

(3) The kind, amount and whereabouts of the waste oils are to be continually entered in the record book. The details concerning the set-up and keeping of the record book, the retaining of receipts and the periods of safekeeping of the records shall be governed by regulations issued by the Federal Minister for Health Affairs in cooperation with the Federal Minister of Economic Affairs.

§ 7 Supervision

(1) Trade and other economic enterprises as well as public law juridic persons which accumulate waste oils within the meaning of § 3 (2) or accept waste oils of this kind must upon request furnish the official responsible under state law the information required to supervise the whereabouts of the waste oils. § 5 (3) applies accordingly.

(2) The persons commissioned by the responsible official with gathering information are authorized within the scope of § 7 (1) to enter property, installations, and business offices and, for the prevention of imminent danger to public safety and order, also the living quarters of the person required to furnish information, to make tests and inspections there, to take samples, and to examine the business records of the person required to furnish information. The basic right of Article 13 of the Constitution concerning the inviolability of a residence is to this extent limited.

(3) Record books and receipts under § 6 must be presented or delivered upon request to responsible officials for examination.

(4) The information and documents obtained under § 7 (1), (2), and (3) may not be used in a tax proceeding, a criminal proceeding involving a tax offense or a fine proceeding involving a tax violation. The provisions of §§ 175, 179, 188 (1) and 189 of the Federal Tax Law concerning the duties to assist and give notice to the financial authorities do not apply to this extent.

§ 8 Exceptions

(1) §§ 6 and 7 of this law do not apply

1. to lake and river transport businesses;
2. to the Federal Railways and the Federal Post Office;
3. to federal installations which serve sovereign purposes and do not fall within § 8 (1) Number 2.

(2) The Federal Minister for Traffic is empowered, in agreement with the Federal Minister for Health Affairs, to issue regulations with pro-
visions for lake and river transport concerning the collection of the waste oils named in § 3 (2) from watercraft and floating installations, in particular concerning

1. the duty to deliver waste oils at specific intervals to an enterprise obligated to collect (§ 3) or to a collection place approved by a responsible official;
2. the record of delivery and the safekeeping of these records; and
3. the supervision of the collection and delivery of the waste oils.

(3) The International Treaty on the Prevention of the Pollution of the Sea by Oil of 1954 as well as the legal provisions promulgated in accordance with the Law Concerning the International Treaty on the Prevention of the Pollution of the Sea by Oil of 1954 of 21 March 1954 (II Bundesgesetzblatt 379) remain undisturbed.


§ 9 Breach of Professional Secrecy

(1) Anyone who reveals without authorization another’s secret, especially a trade or business secret, which became known to him in his capacity as employee or agent of one of the officials assigned a duty on the basis of this law will be punished by imprisonment up to one year or a fine or both.

(2) If the perpetrator acts for money or with the intention to enrich himself or another or to injure another, the penalty may be up to two years’ imprisonment; in addition a fine may be imposed. These punishments also apply to one who converts another’s secret, especially a trade or business secret, which became known to him under the conditions of § 9 (1), into money without authorization.

(3) The crime will only be prosecuted upon application of the party injured.

§ 10 Imposition of Fines

(1) It is a violation of a regulation intentionally or negligently to
1. fail to keep a record book, contrary to § 6 (1);
2. fail to furnish information or fail to furnish it correctly, completely or timely, contrary to § 7 (1);
3. refuse to permit tests, inspections, the examination of business records or the taking of samples, contrary to § 7 (2);
4. fail to present or deliver record books or receipts, contrary to § 7 (3); or
5. contravene a regulation issued on the basis of § 6 (3) or § 8 (2), if it imposes a fine governed by this section on particular acts or omissions.

(2) A violation of regulations may be punished with a fine of up to 10,000 Deutsche Mark.
Part Four: Transition and Concluding Provisions

§ 11 Transition Provisions

(1) Dutiable goods (§ 4 (2)) for which the oil tax became unconditional before this law became effective are subject to the compensation tax, with the exception of those which are in the hands of consumers, service stations or auto repair shops. The tax liability arises when the law becomes effective. The person who is liable for the tax is the possessor of the goods. For goods en route the liability transfers to the recipient with the transfer of ownership.

(2) The person liable for the tax must declare the dutiable goods to the Federal Office in writing within four weeks after this law becomes effective. Payment of the tax is due without request four weeks after the declaration; for goods not properly declared it is due at the expiration of the declaration period.

§ 12 Validity in the State of Berlin

This law is valid according to § 13 (1) of the Third Transition Law of 4 January 1952 (I Bundesgesetzblatt 1) in the State of Berlin also. Regulations issued on the basis of this law are valid in the State of Berlin according to § 14 of the Third Transition Law.

§ 13 Effectiveness of the Law

(1) § 3 (1), (2), (3) Sentence 1, and (4) become effective 1 July 1969. § 6 (1) becomes effective on the first day of the calendar year following the publication of the regulations based on § 6 (3).

(2) Otherwise this law becomes effective on 1 January 1969.