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THE GERMAN ENVIRONMENTAL MOVEMENT AND THE U.S. MILITARY PRESENCE

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Case Study by JAMES H. TIMBERLAKE

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SIXTEENTH SESSION

SENIOR SEMINAR IN FOREIGN POLICY

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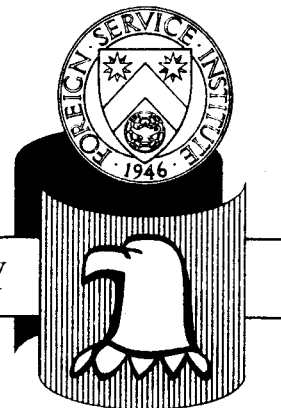
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Man has always been a polluter of his environment, and the quality of the environment has always been a matter of public concern. Laws have long existed in the US and Europe to protect the environment. But it has only been in the last decade, and especially in the last five years, that the public has become generally aroused to the need for a new, comprehensive environmental protection effort. The growth of industry and population, the continuing expansion of urban areas, the development of new technologies, and a rising standard of living, all of these have contributed to the modern pollution challenge and helped produce the new environmental response. But what appears to be a distinguishing mark of the current wave of environmental awareness is the growing belief that man may be exceeding nature's capacity to assimilate his wastes. In the past, man assumed that land, water, and air had an infinite capacity to absorb his wastes and to purify themselves. Now it appears that there is a limit to the burden our national environment can bear.^{1/}

President Nixon reflected this new environmental awareness when on January 1, 1970, as his first official act of the new decade, he approved the National Environmental Protection Act and proclaimed the 1970s as the "Environmental Decade." In his State of the Union address in 1971, the President named the environment as one of his six major goals for the US. In the first two years of the new decade, Congress enacted five major pieces of environmental legislation.

In the Federal Republic of Germany (FRG), the government of Willy Brandt on October 28, 1969, issued a policy statement declaring environmental protection to be a focal point of its domestic reform program. It appointed a Cabinet Committee on Environmental Problems and charged it with preparing a long-range environmental protection program. This program was drafted, submitted to the Bundestag, and approved by it on September 29, 1971. Entitled A Programme for the Protection of the Human Environment, it set forth for the first time a long-term environmental policy for the FRG as a whole and described the steps necessary to ensure the quality of the nation's environment.^{2/} In the next year and a half, the Federal Government enacted six major pollution control laws.

The FRG and the US face similar environmental pollution problems. But because of its smaller size and denser population, the FRG has a more acute problem than the US. The FRG is equivalent in size to the State of Oregon; it stretches 517 miles from north to south and 281 miles from east to west. With a population of roughly 62 million, it has a density of about 635 persons a square mile. This compares to 57 persons a square mile in the US, 236 in France, and 591 in Great Britain. The Netherlands, with 912 persons a square mile, and Belgium, with 818, are more densely populated.^{3/}

Like the US, but unlike most other advanced industrial states, the FRG must deal with the problems of pollution and environmental enhancement through a federal rather than a unitary political structure. The constitution of the FRG, the Basic Law of May 23, 1949, divides power between the Federal and State governments. Some powers, such as foreign relations, defense, post and telecommunications, money and currency, and

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railroad and air traffic, are vested in the Federal Government; some powers, such as education, religion, police, the arts, and radio and television, are reserved to the States; other powers, such as civil and criminal law, taxation, and motor transport and road traffic, are conferred on both. In principle, the Federal Government exercises concurrent power only where uniformity of regulation requires. If there is a conflict between Federal and State law, Federal law prevails.^{4/}

Unlike the US, the German Federal Government does not have a full-blown civil service to administer its laws, or its own police force to enforce its laws. To a large extent, the Federal Government's laws are administered by State civil servants; only a few Federal ministries have their own field organizations. Most Federal ministries are therefore relatively small, and fewer than 20% of German civil servants work for the Federal Government. The Federal Government also relies on the State police forces to enforce its laws.^{5/}

The FRG has 11 States: Baden-Württemberg, Bavaria, Berlin, Bremen, Hamburg, Hesse, Lower Saxony, North Rhine-Westphalia, Rhineland-Palatinate, Saarland, and Schleswig-Holstein. Each State is divided into counties and independent cities, usually of 20,000 or more population. Counties, in turn, are divided into communes, the lowest level of government.^{6/}

The States play a large role in Federal decisions through the Bundesrat, the upper house of the Federal Parliament. The Bundesrat is made up of high officials of the State governments, and its votes are cast as a block, as directed by the State governments. It has the right of absolute veto over all laws significantly affecting the rights and interests of the States, about half of all Federal legislation. In the case of other legislation, its veto is suspensory and can be overridden by the Bundestag, the lower house of the Federal Parliament. A constitutional amendment requires a two-thirds vote by both houses.^{7/}

The Federal Government's environmental effort is headed by the Cabinet Committee for Environmental Problems, created in July, 1970. It coordinates the activities of all Federal departments in the environmental field. The Ministry of the Interior is the government department primarily responsible for environmental matters. It is assisted by a Council of Experts on Environmental Problems, which provides scientific advice on environmental developments, and a Federal Environmental Office, which collects statistics and coordinates the environmental research of other Federal agencies.^{8/}

The Federal Government's environmental program rests on seven main principles:

-- environmental planning must be on a long-term basis and include all of the measures necessary to protect and enhance the quality of the environment. It is as important to prevent as to correct damage to the environment.

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-- the cost of protecting the environment should, whenever possible, be borne by the person or agency that does the polluting -- "the polluter pays" principle. But public funds will also have to be spent.

-- the free market mechanism is the best instrument for solving environmental problems, but the government should encourage private businessmen to take greater account of environmental considerations and should, on occasion, intervene where private enterprise is ineffective.

-- a successful environmental effort depends on the environmental awareness of the public, and this awareness must be strengthened.

-- the Federal Government must make greater use of scientific advice, coordinate and support environmental research, assist the development of pollution control technology, and assemble and make available the necessary data on which to base a successful environmental effort.

-- close cooperation is essential between the Federal and State governments, and between government and science and industry.

-- the Federal Government must encourage more effective international cooperation in the environmental field.^{9/}

Prior to 1972, the Federal Government had only limited power to legislate in the environmental area. Power to legislate with respect to air, water, and noise pollution, solid waste disposal, and land management was primarily in the hands of the States. Although the States had become more active in passing environmental protection measures, the Federal Government felt that it could not carry out its environmental program unless the constitution were amended to give it concurrent power to legislate in the environmental field. To this end, it introduced a bill to amend the appropriate article of the Basic Law. On April 12, 1972, the bill passed, but with only part of the powers conferred. The Federal Government did receive concurrent power to legislate in the field of air and noise pollution and solid waste disposal. But in the area of water management and land use, the States withheld the power.

Air pollution is more severe in Germany than in the US. And, as in the US, the problem has resulted in mounting danger to health and growing damage to property. The heaviest polluter of German air is transportation. In 1970, it accounted for half of the 20 million tons of particles and gases put into the nation's air. Of the other half, power plants and residential and other heating furnaces accounted for 7.8 million tons, and other industrial sources for the remaining 2.2 million tons. In terms of damaging emissions, however, power plants and heating furnaces were the worst offenders. They accounted for 90% of the total sulfur dioxide emissions, 45% of the nitrogen oxide, and 80% of the dust particles. (Both sulfur dioxide and nitrogen oxide are believed to be a cause of various respiratory ailments; sulfur dioxide in addition causes the greatest damage to materials.)^{10/}

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Under its power to regulate motor and air transport, the Federal Government had sought to limit air pollution even before the constitutional amendment of April, 1972. A Road Traffic Licensing Ordinance had been amended to limit carbon monoxide and hydrocarbon emissions. A Federal Law on the Reduction of Lead Content in Petrol of August 6, 1971, set a maximum lead content for gasoline of 0.4 grams per liter beginning in 1972 and 0.15 grams per liter beginning in 1976. The goal is a 90% decline by 1980 of harmful auto emissions over the level of 1969. The Federal Law for Protection from Aircraft Noise of March 30, 1971, required aircraft to keep air pollution within the bounds allowed by the existing state of technology.^{11/}

With the constitutional amendment of 1972, however, the Federal Government was able to pass its first comprehensive and uniform air quality legislation. This was the Federal Emission Protection Law of March 15, 1974. Under this law, the Federal Government was given power to regulate not only air, rail, motor, and water vehicles, but also machines, equipment, and other moveable sources of air pollution, and to regulate stationary sources of air pollution, such as industrial facilities and business premises. The law authorized the Federal Government to set emission standards and to determine what facilities require a license. It provided for the measurement of emissions from air-polluting facilities and for the inspection, licensing, and monitoring of such facilities. It required the States to monitor and record the condition of air in heavily-polluted areas and to draw up clean air plans for these areas. During particularly bad pollution periods, the law allowed the States to take special measures to limit when and how air-polluting facilities will operate. It also authorized the Federal Government to prohibit the sale of vehicles, machinery, equipment, and motor fuels that fail to meet approved pollution control standards or technical requirements.^{12/}

As passed, the law is only a skeleton and must be fleshed out by Federal and State implementing ordinances and regulations. It will take several years before this is done. How effective the law will be will depend on these implementing measures and on how well the State and local governments enforce them.

Noise is a major source of irritation to Germans, and automobile noise seems to disturb them the most. Noise also causes physical damage, and in the FRG an estimated 20% of industrial workers are subject to noise that endangers their hearing.^{13/}

Under its power to regulate road and air traffic, the Federal Government had long sought to control noise as well as air pollution. The Road Traffic Law of December 19, 1952, had endeavored to prevent avoidable nuisances, in particular noise arising from motor vehicle traffic, and the Air Traffic Law of November 14, 1968, had authorized the Federal Minister of Transportation to take measures to prevent excessive noise from aircraft in the air and on the ground. Under both laws, motor vehicles and aircraft were required to be so constituted that their operation would not cause noise in excess of technologically feasible limits.^{14/}

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The Law for Protection from Aircraft Noise of March 30, 1971, was aimed at both airfields and aircraft. It provided for the establishment of a noise-protected area around all military and commercial airfields where the noise level exceeds 67 decibels. (Serious damage to hearing can occur from exposure to 90 decibels over an eight-hour period.) No hospitals, old age homes, rest homes, schools, or similar establishments can be built anywhere within the noise-protected area. Living quarters can only be built within the area where the sound level does not exceed 75 decibels. Where it does exceed that level, only certain types of living quarters can be built, such as living quarters and barracks for members of the German and Allied armed forces, and these quarters must be soundproofed. The cost of soundproofing, as well as compensation to property owners affected by the building ban, must be borne by the operator of the airfield. The law also required operators of airfields and pilots not to exceed the level of unavoidable noise and to reduce aircraft noise during operation in the air and on the ground.^{15/}

The Federal Government had also sought to prevent avoidable noise from equipment at construction sites. The Law for Protection From Construction Noise of September 9, 1965, was the chief instrument here. Federal Trade Regulations also required some noise-producing commercial facilities to obtain a license.^{16/}

The States had numerous anti-noise statutes on their books. A Rhineland-Palatinate law, for example, forbade any activity that disturbed the peace of others any place between the hours of 2000 and 0700 and in residential areas additionally between the hours of 1300 and 1500. It proscribed unnecessary automobile or motorcycle noise at any time, permitted motor-driven lawn mowers and other power-driven machinery to be used only on work days between the hours of 0700 and 1300, and 1500 and 1700, and allowed radios, television sets, and musical systems to be played between the hours of 2200 and 0700, and 1300 and 1500, only at a volume that would not disturb others.

But it was the Federal Emission Protection Law that empowered the Federal Government to establish for the first time comprehensive and uniform regulations for noise control. For that law covered not only air, but also noise. Under the law, the Federal Government was given the power to regulate noise not only from air, motor, rail, and water vehicles, but also from domestic appliances, motor bikes, lawnmowers, and other noise-making products, and was authorized to subject them to Federal standards of licensing, inspection, testing, and emission levels, and to Federal technical specifications.^{18/}

As in other affluent countries, solid waste disposal has become a particularly acute problem in the FRG. One reason for this is the growing use of packages, short-lived products, and throw-away containers. From 1960 to 1970, glass refuse in the FRG more than doubled, tin can refuse tripled, and plastic refuse rose by more than 40 times. The disposal of cars and tires had also become a major problem. About 970,000 vehicles were wrecked in the FRG in 1970, and of these 90,000 were dumped.^{19/}

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The production of solid wastes in the FRG in a recent year was 260 million metric tons. Of this, animal husbandry accounted for 191 million metric tons, mining, manufacturing, and other industries for 25 million tons, domestic garbage for 22 million tons, and sewage sludge for 18 million tons. The per capita production of all solid wastes in the FRG was about 13 pounds a day; in the US about 8 pounds a day. Measured by volume, domestic garbage accounted for 71% of solid wastes produced in the FRG in 1970. This was about twice as much garbage per square mile as in the US.^{20/}

The production of solid wastes in the FRG is outstripping the facilities for disposing of them. In 1970, no more than about 70% of the solid wastes produced in the FRG was collected, and over 90% of all solid wastes was deposited in such a way as to cause further pollution of ground water, air, and land. Of the 50,000 solid waste disposal facilities in the FRG, only 5,000 were controlled. Many disposal facilities, moreover, were located in the heart of populated areas.^{21/}

The constitutional amendment of 1972 also gave the Federal Government power to legislate over solid waste disposal, and the Law for the Disposal of Refuse of June 7, 1972, was the immediate result. That law provided that solid wastes shall be disposed of only at approved facilities, that the Federal Government may establish regulations under which the States can license private refuse operators, and that the States shall draw up waste disposal plans. It also provided that old cans and tires must be disposed of at permanent facilities, and that the Federal Government can prohibit the sale of packages and containers that cannot be disposed of economically.^{22/}

Water has an impressive ability to purify itself, but in the FRG, as elsewhere, excessive demands have been placed on the self-purification capability of many of the nation's waters. The FRG's main water polluters are home and industrial sewage, cooling water from industry and power stations, and chemicals. In 1969, the FRG was producing 8.4 million cubic meters of domestic sewage, 17 million cubic meters of industrial sewage, and 33.6 million cubic meters of cooling water each day. Only about 60% of the FRG population in that year was being served by water treatment plants, and only about 38% of the nation's sewage was being given secondary treatment. Half of the water used by industry was being discharged into public sewage systems; the other half and most of the cooling water was being discharged directly into the nation's waters. Of the direct discharge, 5% was untreated and 15% insufficiently treated. About 35% of the nation's drinking water was being taken from polluted rivers and lakes, and more would have to be taken in the future.^{23/}

The Federal Government had used its limited powers to pass a number of laws to reduce water pollution. It had legislated against synthetic organic chemicals, some of which are toxic to fish and aquatic life and possibly harmful to humans. The Law on the Use of Detergents in Washing and Cleaning Agents of September 5, 1961, as amended, authorized the Federal Government to set standards to achieve the highest degree of degradability possible under the existing state of technology and to

prevent the importation, exportation, or marketing of detergents not meeting these standards. This law was implemented by a Federal ordinance requiring the degradability to amount to at least 80%. The Plant Protection Law of May 10, 1968, as amended, sought to prevent damage to plants from the use of pesticides. The Law on Traffic in DDT of August 7, 1972, banned the use of DDT except for experiments and for combatting lice, bedbugs, and certain ants. The Water Resources Management Law of July 27, 1957, contained very general provisions on the use of ground, surface, and coastal waters.24/

The Federal Government, however, felt that it had to go beyond these laws if effective management of the nation's water resources were to be achieved. It wanted concurrent power to legislate uniform water quality standards and monitoring procedures, to regulate the licensing of water users, to prescribe uniform regulations for storing substances harmful to water, to establish guidelines for regulating sewage discharge, and to set uniform sewage levies for the entire country.25/ But the Bundesrat refused to grant it this power.

Land management is another area in which the Federal Government has traditionally lacked power to legislate. As in many other industrial states, the demand for homes, industrial sites, highways and railways, and recreation areas continues to grow in the FRG and to exert pressure on the available land. About 174 square miles of land will be required for these purposes each year until 1980. The Federal Government fears that, unless coordinated and planned, land development will upset the ecological balance of the country.26/

To avoid this, the Federal Government, anticipating a favorable constitutional amendment, drafted a new Law on the Protection of Nature and the Preservation of the Landscape to replace an inadequate one of 1935. The new law would establish Federal guidelines for State land development plans and programs, contain provisions to preserve the variety of the landscape, establish recreation facilities, and require landowners to make a reasonable contribution to the development of the landscape. The Federal Government also drafted a new Federal Forestry Law to coordinate forestry legislation at the Federal level, and a new Federal Mining Law to permit mining only if damage to the environment is repaired and the landscape preserved. It further planned to amend the Federal Hunting Law to take fuller account of land use considerations.27/

Here again, however, the Bundesrat refused to allow the constitution to be amended. Given the jealousy of the States with respect to land management, it seems unlikely the Federal Government will receive the power.

The cost of protecting and improving the German environment comes high. For the period 1971 to 1975, the Federal Government estimates that about \$10.4 billion will have to be spent on pollution control measures in new facilities. Water pollution control will account for well over half of this. An estimated \$9.9 billion more will have to be spent for pollution control in facilities that were operational before 1971. Together, these expenditures will amount to an estimated



1.8% of the cumulative gross national product for the period. For the period 1970-1985, some \$17 billion will have to be spent to raise the population served by secondary water treatment plants to 90% and another \$8.8 billion to provide for adequate treatment of industrial effluents.28/

The Federal Government is determined that the "polluter pays" principle, which has been largely ignored, shall be applied with greater vigor in the future and, if necessary, enforced by law. But it recognizes that polluters cannot bear all of the costs of pollution control and that environmental damage cannot always be ascribed to particular offenders. Both Federal and State governments, in fact, offer relief from some private-sector expenditures. Tax relief is granted in the form of accelerated depreciation of pollution control facilities. In addition to straight-line depreciation, 50% of the cost of a pollution-reducing facility can be deducted in five years. Borrowing for such investments is encouraged by Federal guarantees of loans. The possibility of direct financial grants for investments wholly designed to protect the environment is under study. So, too, is the possibility of more liberal tax relief.29/

* * * * *

The German environmental movement is unique in having to deal with the presence of a fairly significant number of foreign military forces. Besides its own armed forces, numbering about 495,000, the FRG had, at the end of 1973, about 386,500 Allied military forces on its soil, deployed along a line from its northern to its southern border. Of the Allied forces, US military personnel accounted for about 210,000. Including civilian employees and dependents, US forces totalled over 380,000 persons.30/

US forces are scattered over a large number of installations in southern Germany, primarily in the five states of Bavaria, Baden-Wurttemberg, Rhineland-Palatinate, Hesse, and Saarland. In 1971, the US had 929 installations in Germany, embracing about 310,000 acres (484 square miles) and representing an investment of about \$160 million. The US Army had 816 of these installations; the Air Force 111.

US forces in Germany have a clear obligation to comply with German environmental law. This obligation stems from two sources: from US laws, executive orders, and administrative regulations; and from NATO agreements.

US environmental policy and law is laid down in the National Environmental Policy Act of 1969 and in various Federal statutes, such as the Clean Air Act, the Federal Water Pollution Control Act, the Solid Waste Disposal Act, and the Noise Control Act, that seek to prevent, control, and eliminate environmental pollution. The National Environmental Protection Act established the Council on Environmental Quality in the Executive Office of the President to study trends in the environment, to assess Federal programs, and to advise the President on national environment policy. The Environmental Protection Agency, created in 1970, was set up as an independent regulatory agency to administer the Federal environment program.

The chief measure implementing the Federal environmental program is Executive Order 11752 of December 17, 1973. Among other things, the Order states that Federal agencies with facilities abroad shall operate these facilities "so as to comply with the environmental pollution standards of general applicability in the host country or jurisdiction concerned." For the Department of Defense (DOD), the Executive Order is implemented by two main directives. DOD Directive 6050.1 of August 9, 1971, provides that in countries or areas not under US control or administration, DOD projects or activities shall be subject to the environmental laws, regulations, and stipulations of the foreign government concerned. DOD Directive 5100.50 of May 24, 1973, provides that DOD components outside the US shall conform at all times to the environmental quality standards of the host country. The latter directive further states that these facilities shall conform to the extent practicable to US national environmental policies, laws, orders, and regulations, that they shall show leadership in protecting and enhancing the quality of the environment, and that they shall meet the same environmental requirements as DOD facilities located within the US. When, in the interest of national defense, it is not considered practicable for a facility to comply with these policies, the Directive requires that the matter be referred to the office of the Secretary of Defense for resolution.

The DOD environmental directives are, in turn, implemented by the Departments of the Army, Navy, and Air Force, and down through the chain of command to the unified and component commands in the field. The main departmental directives are Army Regulation AR 11-21 of November 27, 1970, and Air Force Regulation AFR 19-1 of February 20, 1974. In the European theater, the DOD directives are implemented at the unified command level by United States European Command (USEUCOM) Directive ED 61-6 of November 29, 1972. At the component command level, the United States Army Europe (USAREUR) and the United States Air Forces in Europe (USAFE) implement the USEUCOM and departmental directives by supplementary regulations of their own. These supplementary regulations make clear the obligation of the Army and the Air Force in Europe to comply with host country environmental standards and criteria. Along the way, however, qualifying language has crept into some of the higher-level directives, and this language could cause some to interpret the directives in a way not fully consistent with the spirit of Executive Order 11752.

The other requirement of US forces to comply with German environmental law stems from the US obligation under the NATO Status of Forces Agreement (SOFA) and the Supplementary Agreement to the NATO SOFA. The NATO SOFA provides in general terms for the stationing of the military forces of one NATO nation on the territory of another NATO nation. Article II of the NATO SOFA reads: "It is the duty of a force and the civilian component and the members thereof as well as their dependents to respect the law of the receiving State.... It is also the duty of the sending State to take necessary measures to that end." Although some Americans sometimes argue that "respect" does not mean literal compliance, most Americans, and certainly the Germans, take the language to mean that US forces must comply with German law.

The Supplementary Agreement to the NATO SOFA provides specifically for the stationing of Belgian, Canadian, French, Dutch, UK, and US forces in the FRG. Two sections of this Agreement permit exceptions to the general obligation to respect German law and are considered to cover environmental matters. Article 53 allows the Sending States to apply their own regulations within the accommodations made available to them by the FRG, provided their regulations are equal to or higher than those prescribed in German law. Article 57 provides that, subject to due regard being paid to public safety and order, German law shall not apply to the construction, design, and equipment of vehicles, aircraft, trailers, and inland water vehicles of the Sending States, provided these military items conform to the regulations of the Sending States. The purpose of Article 57 is to avoid subjecting the military equipment of a Sending State, which may be designed for worldwide use, to German design standards and specifications. In the environmental field, US forces may thus apply their own regulations within their own bases, airfields, training areas, and other fixed installations as long as their regulations are equal to or higher than German standards, and they do not need to design their military vehicles and equipment to meet German environmental regulations as long as they conform to US regulations. 31

In terms of the FRG's total pollution problem, US forces are a negligible factor. The FRG's main polluters are its own industry, transportation, and private homes. US forces, however, do contribute to the German environmental problem and, especially at the local level, can become a target of criticism. If not properly handled, environmental differences can become blown up out of all proportion to the merits of the case and create an embarrassing political issue for the two governments.

A number of developments have occurred to make the presence of US forces in Germany a more serious environmental problem. In the first place, German industry and population have expanded into non-urban areas where US forces are housed and trained. US barracks and training areas that were once on the outskirts of cities have now often become completely surrounded by urban growth. Secondly, modern military equipment is often noisier and more heavily mechanized than it was before. Thirdly, the German public has become more environmentally conscious and is more sensitive to the environmental impact of US and other Allied forces on its territory. And, finally, the spirit of detente has lessened German fears of an eastern threat and has made some Germans less tolerant of the inconveniences caused by US forces. Ten years ago the German people put up with these inconveniences because the threat was clear.

Air pollution by US forces has not been a serious problem. US forces do not generate their own electric power, but rather obtain it from local German utilities; they have thus avoided involvement in one of the worst sources of air pollution. The main cause of air pollution at US military facilities is heating plants. These plants can be controlled in two ways: by improving the quality of the fuel they burn and by installing emission control devices on their stacks. US forces do both. USAFE, for example, planned to convert all of its boilers from coal-fired to oil-fired, but had to abandon its plans when the energy crisis struck. At McGraw Kaserne in Munich, USAREUR took the other approach. When local Germans complained of the heating plant's smoke emission, the Army solved the problem by installing a precipitator on the stack.

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Another source of air pollution is US forces military vehicles and heavy equipment. Both the Army and the Air Force seek to control and minimize this source of air pollution by preventive maintenance, by proper tuning and adjustment of engines and fuel systems, and by training mechanics and operators of vehicles and equipment to develop good driving and maintenance habits.

Solid waste disposal has likewise not been a major problem for US forces in Germany. US forces generally contract with private German operators to have their solid wastes collected and hauled away and with German municipalities to have their solid wastes disposed of at official landfills. The main responsibility of US forces is to see that the collection and disposal is done in accordance with German law and that it does not become a matter of controversy.

Water pollution has been a more serious problem for US forces. Because of their isolation, most US Air Force bases in Germany, and a few Army bases, have their own sewage treatment facilities. Some of these facilities are overburdened and unable to comply with German standards. The Germans are aware of this because they are allowed to sample the sewage effluent. Every effort is made to keep these facilities in good condition and to use well-trained operators. To do more, however, requires a lot of money, and this is not easy to obtain.

Whenever possible, the Army and the Air Force prefer to contract with local municipalities to discharge their sewage and waste water into the municipalities' sewage system. This is the case, for example, in Heidelberg, where the city's sewage treatment plant takes care of the approximately 14,000 Americans living at Army installations and elsewhere in the area. Where US forces make such contracts, they are responsible to see that the receiving facilities are adequate and that their use of these facilities does not become a matter of controversy.

Petroleum (POL) products have been another source of water pollution by US forces. These products find their way into German waters through discharge into sanitary storm sewers and open drainage ditches, through improper disposal at motor pools, parking areas, and wash stands, through leakage from POL storage tanks, and through accidental spillage.

The Army has had a particular problem with its POL storage tanks. German law requires that above-ground storage tanks have liquid-tight dikes, capable of holding at least the capacity of the tank plus a foot of freeboard, that below-ground tanks have double walls, and that fuel transfer points and parking areas have hardstands and catch basins, drained through POL separators. The Army has 22 POL storage sites in Germany, and all of them need working on to bring them up to proper standards.

Both the Army and the Air Force have had a problem preventing POL products from motor pools, parking areas, fire fighting pits, aircraft and vehicle washracks, and accidental spillage from finding their way into German waters. The answer here has been to install POL separators. POL separators have also been installed in storm sewers where runoff is likely to contain POL products. POL products trapped in these separators are pumped out and either reclaimed or burned.

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Another problem has been the direct discharge by US forces of pollutants into German waters. For a long time this issue was handled between US forces and German state and local authorities, but, because of differences over procedural matters, little was accomplished to solve the problem. The Federal Ministry of Economics and Finance finally stepped in and has now taken over the responsibility of representing Germans interests in the matter.

Since US forces operate few industrial plants in the FRG, they do not contribute to thermal pollution. They also use biodegradable detergents, as required by German law, and thus avoid adding to this source of water pollution.

Noise causes more complaints each year than any other environmental problem in Germany. Both the Army and Air Force have encountered strong opposition to the noise created by their aircraft, vehicles, and equipment.

Supersonic flights, whose sonic boom can create a noise corridor 45 miles wide, are strictly regulated by the Federal Government. The Federal Government also sets minimum flying altitudes, 2,000 feet over heavily-populated areas and 500 feet elsewhere. Exceptions are allowed for military aircraft if their defense mission requires.

US forces take special measures of their own to reduce aircraft noise and satisfy local complaints. Ramstein Air Base, the largest of eight principal US Air Force bases in the FRG, is a case in point. Located about 9 miles west of Kaiserslautern, the base and its flying activities have long been the subject of complaint by citizens and officials of Kaiserslautern. The Air Force has tried to reduce these complaints by establishing an offset landing approach to avoid flying over the downtown section of the city, by requiring aircraft to turn after takeoff so as to avoid the city, by forbidding aircraft to take off and land after 2300 hours, except for active air defense missions or training exercises, and by installing noise suppressors to reduce noise produced by static engine tests. Base officials have also worked closely with local officials and the press to improve community relations and German understanding of their efforts to reduce noise. Similar measures have been taken at other Air Force bases in Germany.

The Army, with 800 aircraft, 100 heliports, and 40 airfields of its own, has also sought to reduce noise complaints. At its helicopter airfield at Feucht, for example, the Army has tried to meet citizen complaints from nearby Moorenbrunn by restricting flying to the hours between 0700 and 2200 hours, allowing no flights on weekends and holidays, except for emergencies, altering the flight path and landing pattern of aircraft so as to avoid flying over built-up areas, taking advantage of the buildings, woods, and Autobahn around the airfield to shield Moorenbrunn from takeoff noise, and extending the runway to ease the noise problem of the downwind approach. The Army has also invited Bavarian State officials to the airfield to explain its noise abatement measures.

Both the Army and the Air Force restrict night flying and training exercises and seek to avoid public complaints by giving advance notice of these operations. But this does not always work. In the summer of 1973, for example, Seventh Army headquarters announced that an Army helicopter battalion would conduct night flying exercises at Malmsheim

airfield in Böblingen County, near Stuttgart. This announcement brought immediate protests from surrounding communities. When the battalion went ahead with the exercise, 500 demonstrators and 200 German cars moved onto the airfield and blocked the exercise, forcing its cancellation. One irritated US Army officer was quoted as saying: "I am asking myself what we are still here for anyway. The Germans apparently rather want to be protected by the Russians."^{31/}

The use of land for Army maneuvers and training has been another troublesome issue. Under Article 48 of the Supplementary Agreement to the NATO SOFA, the FRG is obligated to make available the accommodations needed by Allied forces. Under this Article, US forces received three major training areas and 200 local training areas.

The three major training areas are at Grafenwoehr, Hohenfels, and Wildflecken, located 50, 70, and 18 kilometers respectively from the eastern border of the FRG. The largest and most important of these is Grafenwoehr. It is 88.4 square miles in area and is shared by German, French, and British armed forces. Twice a year all US armored, artillery, and tactical units undergo firing and other training at these three major training areas. These major training areas have not been a particular environmental problem for US forces and the German public.

The problem has occurred over the local training areas. These are situated close to troop garrisons and enable these forces to engage in small-unit training throughout the year. As elsewhere in Germany, however, land around these local training areas has been developed and swallowed by suburban construction. Local training areas are often now the only recreation areas the local populace has, and this has brought increasing demands that the US Army curtail its activities at these areas or turn them back to the Federal Government altogether.

The Army's changing requirements have helped aggravate the issue. The Army has long wanted to regroup its forces in Germany to improve their effectiveness. It has now done so, but in the process has had to move troops from Bavaria to Hesse and Baden-Württemberg, creating a need for local training areas at their new locations. The Army has also sought to modernize its forces in Germany, increasing its combat troops and mechanizing their equipment. Increased mechanization, however, means more space for training and greater possibility of damage to the soil. Finally, the Army has wanted to bring its forces in Germany up to the highest standards of readiness possible, and this has meant a more effective training program.

The problem has not been helped by the Army's failure in certain cases to make clear its requirement for local training areas. In one instance, a local training area was not used for nine months. When an Army unit tried to enter the area, two parking lots, a playground, and numerous park benches had been built by city officials to provide a recreation area for the local population. In another case, a factory, complete with access road and parking lots, had been built on a local training area and become completely operational before the scheduling unit was aware of what had happened.

Army units have also failed at times to police their training areas properly after using them. At one local training area, for example, a US-German inspection team found evidence of oil pollution, soil erosion, and garbage, cars, batteries, and other discarded trash.

Experience has shown that it has become extremely difficult for the Army to extend or improve the local training areas it already has. This was the case, for example, at Ober Olmerwald near Mainz. The local training area there was used by an Army tank battalion and also contained a HAWK missile site for the defense of Mainz. Around the training area were regular walking and exercise paths that had grown up and were used by the local public. In late 1972, the Army requested permission from the Rhineland-Palatinate Government to cut down and thin out some of the trees at the local training area to make it more usable for the tank battalion and to eliminate an obstruction to the missile site's radar. Although the local German forest master was agreeable, the citizens and officials of Mainz raised such strong objections to the proposal that the Army was forced to modify its request. It agreed to reduce its requirement to thin out the trees at the HAWK site and to withdraw entirely its requirement to cut down trees for tank training.

Experience has shown that it has become virtually impossible for the Army to obtain new local training areas. In the course of regrouping its forces, the Army in late 1972 moved a mechanized infantry battalion from Augsburg to Goppingen, in Baden-Wurttemberg. Since the nearest local training area to Goppingen was at Schwabisch Gmund, 18 miles distant over tortuous mountain roads, the Army asked the Federal Government for three new training areas near Goppingen. The areas would total 400 acres and be used by 150 men and 50 vehicles, 25 of them tracked, 15 days each month. This request, too, ran into strong opposition from local citizens and officials; in the end, the Army was forced to cancel it entirely.

The most serious environmental issue to arise thus far also grew out of a request for a new local training area. In Nurnberg, where the Army had long garrisoned two battalions, city housing needs led municipal authorities to request the Army to give up its local training area, which stood in the way of the proposed construction. The Army agreed, in return for which the Federal and Bavarian Governments promised to make a new training area available near Feucht. Here, again, however, opposition developed and soon found expression through a well-organized environmental action group. Several thousand persons from the Feucht area demonstrated before the Bavarian State Chancellery, and the mayor of Feucht subsequently threatened to lead a small convoy of cars to Heidelberg to turn over 80,000 signatures to USAREUR headquarters. He also hinted that more protests and even a sit-down demonstration might follow. The issue became highly charged emotionally and hopelessly entangled in internal German politics, so that the Bavarian Government finally felt constrained to notify the Federal Government that it could not make the Feucht area or any other nearby area available to the Army for training. The Army, in response, offered to scale down its request by one-third, to use the training area only 150 days each year, to refrain from using it at all on weekends and holidays without prior coordination with the Federal Government, and to reserve certain trails for public recreation.

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probably elapse before the project is actually funded. By that time, a local environmental issue could well have become a major issue.

From the German point of view, US forces are obliged to comply with German environmental law and are therefore responsible for paying the cost of pollution control. This is in accordance with the principal, the "polluter pays." In practice, however, the Federal Government is sympathetic to the budgetary problems of US forces. Thus, while reaffirming the responsibility of US forces to pay the cost of pollution control, the Federal Government has allowed some of the money committed under its offset agreement with the US to be spent on environmental projects at US installations. A joint US-German working group has been set up to identify these projects and to recommend those that most urgently need attention.

The second major effect of the German environmental movement on US forces is on their military operations. Of the five environmental issues involving US forces, three -- air, water, and solid waste -- have had their main impact on the economic side. Noise and land use, while imposing an economic burden, have had their main impact on the conduct of military operations. German environmental demands in these two areas have inconvenienced US forces and placed constraints on their flying and ground force operations. Whether these constraints have impaired their capability to carry out their mission is open to question. Some say they have; others that they have not; and still others that they are beginning to.

The German and Allied Governments try to ensure that Federal environmental legislation does not unnecessarily impair the military capabilities of their forces and that it contains whatever military exemptions are required. They do this by consulting during the drafting of an environmental bill and working out mutually acceptable language. The Federal Emission Protection Law was the latest case of this. When the draft of that law came to the attention of Allied Governments in late 1971, they saw in it difficulties for their forces and requested the Foreign Office to give them the opportunity to present their views. This was done, and consultations were held over a period of a year. Under the leadership of the Foreign Office, which had to reconcile the views of Federal ministries and the Bundestag on one side and Allied forces on the other, compromise language was finally worked out and the bill approved. As passed, the law allowed Allied military installations, vehicles, and equipment to be exempt from its air and noise provisions where compelling defense reasons require or where the fulfillment of defense tasks necessitates.

The third major effect on US forces is political. Incidents like Feucht drive a wedge between the German people and US forces and undermine the latter's political acceptability. Such incidents also lend support to those who argue that US forces should be withdrawn from Germany. If German actions interfere with the ability of US commanders to carry out their mission, why, these critics will ask, should US forces be kept in Germany to defend the Germans?

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For the future, it can be expected that German environmental standards will continue to rise. As they do, US forces will face increasing economic, military, and political pressures. On the economic side, US forces will have to pay higher fees to local authorities for access to their solid waste disposal and water treatment facilities and will have to pay more to have their solid wastes collected and hauled away. Inflation, plus the higher costs of better environmental protection, will impose a heavy burden on US forces.

On the military side, further environmental constraints could, at some point, clearly impair the ability of US forces to carry out their mission. The German and US Governments, of course, as well as Allied governments, have a strong interest in seeing that this does not happen. Where it threatens to occur, negotiations will have to resolve the issue.

On the political side, US forces will have to be alert to prevent potentially explosive environmental issues from building up and getting out of control. US forces in Germany are well organized to deal with such issues, and the German government is equally well equipped. Most issues of an environmental nature should be resolved at the local level; few should have to go to the State level, and fewer still to the Bonn level. For the Germans, the problem will be to reconcile the public's demands for a better environment and the nation's need for collective defense. For the US, the problem will be to respond to German environmental demands positively and generously, and to take environmental considerations fully into account when making military decisions. With good will, and a bit of luck, environmental issues should not arise to complicate the political-military relations of the two countries.

FOOTNOTES

- 1/ Office of the Chief of Engineers, US Army Construction Engineering Research Laboratory, Environmental Workshop for USEUCOM (n.p., October, 1973), 1; US Army Engineer School, The National Environmental Crisis (Fort Belvoir, Va. January, 1972), 1-2; Office of the Chief of Engineers, Environment Considerations in Department of the Army Actions (Washington, D.C., August, 1972), 21.
- 2/ Federal Government of Germany, A Programme for the Protection of the Human Environment (n.p., n.d.), Introduction, I-V, 2-49; Federal Government of Germany, Umweltschutz: Das Umweltprogramm der Bundesregierung (Stuttgart, 1972), 8-87.
- 3/ Federal Government of Germany, Press and Information Office, Facts About Germany (6th ed., Wiesbaden, 1966), 45-46; German Information Center, Germany/Questions and Answers (New York, n.d.), 133.
- 4/ Federal Government, Facts, 58, 64-66; German Information Center, Germany, 30-33.
- 5/ Federal Government, Facts, 67, 218.
- 6/ Ibid., 50, 66-69; German Information Center, Germany, 13, 30.
- 7/ Federal Government, Facts, 61-62; German Information Center, Germany, 27-28.
- 8/ Federal Government, Programme, 2, 11, 35.
- 9/ Ibid., IV-V, 1, 4-7, 8-9, 13-18, 27-34, 37-44, 45-49.
- 10/ Ibid., 93; Federal Government, Germany, 91.

Air pollutants are of two kinds: dust particles and gases. Dust particles consist of fly ash, an unburnable mineral fraction of coal; soot, unburned carbon; and lead, the unburnable additive in gasoline. Less visible but more dangerous are the gases. These include sulfur dioxide, the result of the combustion of coal or oil containing sulfur; carbon monoxide, the result of incomplete combustion; oxides of nitrogen, the result of very high combustion temperatures; and hydrocarbons, fuel that is not burned during combustion. Army Engineers, Workshop, 4, and Environmental Considerations, 22-23.
- 11/ Federal Government, Programme, 90, 97-102; U.S. Environmental Protection Agency, International Environmental Bibliographies: Environmental Legislation Europe (Washington, D.C., 1974), 74-76, Federal Government of Germany, Federal Law Gazette, I, April 2, 1971, 282; Richard S. Schubert, "Legal Aspects of Environmental Protection (EP) Overseas Exemplified by German EP Legislation," (unpublished manuscript), 14.
- 12/ Federal Law Gazette, I, March 21, 1974, 721.

- 13/ Federal Government, Umweltschutz, 21; U.S. House of Representatives, Committee on Public Works, The Effects of Pollution Abatement on International Trade, 93rd Congress, 1st sess., April, 1973, A-34.
- 14/ EPA, Environmental Legislation, 77-79; Federal Law Gazette, I, 1953, 837, and I, 1968, 1114.
- 15/ EPA, Environmental Legislation, 82; Federal Law Gazette, I, April 2, 1971, 282.
- 16/ EPA, Environmental Legislation, 80.
- 17/ Ibid., 83; USAFE, Hdqs 86th Combat Support Group, memorandum of February 12, 1974.
- 18/ Federal Law Gazette, I, March 21, 1972, 721.
- 19/ Federal Government, Programme, 58; USAREUR Medical Laboratory Legal Measures for Protection of Environment in the Federal Republic of Germany (n.p., 1972), 1.
- 20/ Federal Government, Programme, 58; USAREUR, Legal Measures, 1.
- 21/ Federal Law Gazette, I, June 10, 1972, 873; EPA, Environmental Legislation, 89.
- 22/ Federal Government, Programme, 75-76, 83, USAREUR, Legal Measures, 1; Federal Government of Germany, Press and Information Bureau, Bonner Almanach (Bonn, 1974), 63.

Waste material is treated in two basic ways: primary and secondary. In primary treatment, solids are allowed to settle by physical means and are then removed from the water. This removes 30% to 40% of the organic matter. In secondary treatment, the wastes are further treated by biological means. This removes up to 90% of the organic matter. Primary treatment is no longer considered adequate, and even secondary treatment cannot remove radiation, thermal pollution, some of the complex wastes produced by modern manufacturing processes, or any substantial amounts of the phosphorous and nitrogen that can over-stimulate the growth of water plants and turn a lake into a bog or a marsh. Tertiary, or advanced, treatment is necessary to deal with many of these. Environmental Protection Agency, A Primer on Waste Water Treatment (Washington, March, 1971), 2-7, 9-20; Army Engineers, Workshop, 6-9; Army Engineers, Environmental Crisis, 6-10.

- 23/ EPA, Environmental Legislation, 83-85, 89-90.
- 24/ Federal Government, Programme, 78-86; USAREUR, Legal Measures, 9-10.
- 25/ Federal Government, Programme, 50-51.

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- 26/ Ibid., 53-54.
- 27/ House Committee on Public Works, Effects of Pollution Abatement, A37-A40; Federal Government, Programme, 8, 13-17, 22-24, 58-59, 61; USAREUR, Legal Measures, 1.
- 28/ House Committee on Public Works, Effects of Pollution Abatement, A37; Federal Government, Programme, 25-26.
- 29/ Information on US forces in the paragraphs that follow was obtained from conversations at USEUCOM, USAREUR, USAFE, and the American Embassy, Bonn, and from documents contained in their files.
- 30/ TIAS 2846; TIAS 5351.
- 31/ Stuttgarter Zeitung, September 22, 1973.
- 32/ Bonn 3804 of 14 March, 1973; Nürnberg Nachrichten, March 15, 1973; Süddeutsche Zeitung, March 15, 1973.

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