Oil Prospectors Make a Strike in Paris

A scandal over a bizarre oil-prospecting technology, for which the state-owned oil company paid $100 million, has enlivened French politics

Paris. For the past four weeks, French politics has been dominated by a fierce controversy over the support given in the mid-1970's by the state-owned oil company Elf-Acquitaine to the ideas of an obscure Italian electronics engineer, who claimed to have discovered a new subatomic particle capable of divulging the whereabouts of hidden objects that ranged from subterranean oil fields to nuclear submarines.

The present government has suggested that former president Valery Giscard d'Estaing and his prime minister Raymond Barre—both still major figures in the French conservative opposition—were duped into endorsing Elf's efforts to develop new prospecting techniques based on the claimed properties of the particle. The research proved fruitless and was abandoned in 1979, but over $100 million of the money paid to the "inventors" has been neither recovered nor accounted for.

In turn, both politicians have accused the government of trying to make political capital out of a decision taken in what they claim was good faith by one of France's major companies to support an ambitious research project. If successful, they point out, the technique would have given Elf a dominant place in the world oil market, as well as providing an important new technology to the nation's armed forces.

The full chronology of the affair became public last week with the government's publication of a report which Giscard d'Estaing and Barre had previously tried to keep confidential on the grounds of commercial and military secrecy. According to the report, the story began in the late 1960's when an Italian electronics engineer with no formal research experience, Aldo Bonassoli, claimed to have discovered "by chance" existence of a hitherto unknown elementary particle emitted at varying frequencies by different substances.

Bonassoli met up with a Belgian count, Alain de Villegas, and the two developed a technique they called "selective directed vision" which, they claimed, used the properties of the particle to reveal the location and nature of hidden objects. Visitors to a laboratory in Brussels, for example, were shown an impressive experiment in which research equipment appeared to detect the shape of an unknown object placed behind a wall.

In 1976, the technique was presented to top management of Elf-Acquitaine—78 percent owned by the French government—and a series of preliminary experiments appeared to reveal an astonishing degree of success. The apparatus, one version of which was operated from an aircraft, and a second from a vehicle on the ground, correctly revealed the location and shape of underground oil deposits already known to the company, but held as a closely guarded secret.

Largely on the basis of the early results, the company had agreed to pay the inventors an initial $90 million for the development of the technique as well as for the worldwide rights to its eventual licensing. Soon, however, things began to go wrong. New experiments were carried out, both in France and in Africa; but despite an expensive series of drilling operations, no oil was found in any of the locations indicated by data produced from the equipment.

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The company eventually called in Jules Horowitz, head of basic research for France's Atomic Energy Commission, to investigate. According to the report, he soon discovered what appeared to be a massive and elaborate hoax. When he placed a surreptitiously bent ruler behind the famous screen in Brussels, for example, the equipment showed an image of the ruler—but straight.

Subsequent examination of the detection equipment by Elf technicians revealed further suspicious evidence. Photosensitive paper supposed to have been registering real time images was, in fact, photocopying paper; and electronic equipment inside the aircraft produced images on a video screen from a magnetic tape that could, apparently, be fed into the equipment by a hidden operator.

Realizing that it might have been hoodwinked, the company backtracked rapidly. A second contract which had been signed with the researchers with a payment of $110 million was quickly canceled, and almost $100 million of the money paid by Elf was retrieved through a group of Swiss banks which had been acting as an intermediary with de Villegas.

Nothing was said about the affair in public at the time. However, a year later, an inspector at the Cours de Comptes, an independent body responsible for checking how government money is spent, somewhat similar to the U.S. General Accounting Office, found a suspicious line in the company's balance sheet, and subsequently stumbled on the whole affair. The inspector, whose report the government decided to publish last week, produced a damning indictment. Why, he asked, were the scientific credentials of de Villegas and Bonassoli (who still describes himself as a "professor of nuclear physics") never checked out? Why were no university scientists ever called in to verify the existence of the mysterious particle and the plausibility of the prospecting technique supposed to have been based on it? And where has $100 million of Elf's money disappeared to, only a small proportion of which, he suggested, could have been spent on the lavish research facilities which de Villegas had built at his residence near Brussels?

None of the questions, however, were answered at the time, for a veil of secrecy was drawn over the whole affair, only to be torn eagerly aside three days before Christmas when details were leaked to the satirical weekly *Le Canard Enchaine*, coinciding—some say more than coincidentally—with the government's release of similar conclusions reached by its tax inspectors, who had come across the affair independently.

For President François Mitterrand, the whole story has been a welcome distraction from other political difficulties. Furthermore, despite its more frivolous aspects, the affair has also stimulated some deep questioning, for example, over the problems of assessing technical claims under intense political and economic pressure (Elf executives have been reminding the public of the "energy crisis" mentality of the time), as well as the implications of an excessive political zeal for secrecy.

Many dimensions of the case are still being eagerly pursued by the French press. Some have been looking into the key involvement of a subsidiary of the Banco Ambrosiana of Milan, which was linked to the Vatican before it collapsed with massive debts 2 years ago. Others have been investigating the role of an American, who is said to have helped de Villegas raise some of the initial funding.

Bonassoli himself is unrepentant. Tracked down by Italian journalists last week in the border town of Ventimiglia, he claimed to have deliberately sabotaged the equipment prior to the final experiments and its inspection by Elf because he had not been fully paid by de Villegas; that the scientific principles on which it worked were still valid, although he was not prepared to give any technical details because of the need to maintain commercial secrecy; and that he has offered both French and Italian scientific communities a demonstration and explanation of a new version of the equipment when it is ready in a few weeks time. If they refuse his offer, Bonassoli said in a statement last Friday, "Then I will go to the United States."

—DAVID DICKSON

At EPA, Two Top Scientists Come on Board

They aim to improve the science at the agency and restore credibility

Since William Ruckelshaus succeeded Anne Burford as administrator of the Environmental Protection Agency (EPA), he has replaced virtually all EPA's top administrators with people representing wide experience in government, environmental policy, and science. The selection of these seasoned professionals—in stark contrast to the inexperienced Burford appointees—has been greeted with general approval by environmentalists and industry alike.

The infusion of new blood has boosted morale at EPA. Two appointments in particular are encouraging to scientists within and outside the agency. Bernard Goldstein, chairman of Rutgers' department of environmental and community medicine, was named assistant administrator for the Office of Research and Development. John Moore, deputy director of the National Toxicology Program, became assistant administrator of the Office of Pesticides and Toxic Substances. Together, the two men oversee more than $250 million devoted to environmental research. In separate interviews with *Science*, they described some of the key issues before them and some of their thoughts about research at EPA.

Goldstein, 44, inherits a branch of EPA that under the Burford administration changed hands twice in 3 years and suffered drastic budget cuts. The Administration's budget request for EPA's R & D in fiscal year (FY) 1984, for example, was only about half the FY 1981 level.

Historically the office has had a multitude of problems. There is the perennial debate about how much long-range research EPA should conduct. Congress wants more, but since 1977, the agency has done little to satisfy federal legislators on this point. The quality of EPA's research has never been as highly regarded as that of the National Science Foundation and the National Institutes of Health. And scientists in the R & D office have long complained that they must cater to the research requests of other parts of EPA, and are unable to pursue their own ideas to any great length.

Goldstein's managerial skills will be put to the test. At Rutgers, he directed 25 people and a $2-million budget. At EPA, he is now in charge of a staff of 1800 nationwide and $245 million. The office of research and development includes the support and management of 14 EPA laboratories located across the country as well as research at universities.

Photos by Marjorie Sun

Bernard Goldstein

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Goldstein says "The common theme between the two jobs is that one is always trying to give the researchers the wherewithal to do the science." He says he intends "to provide research stability" for EPA scientists. "There has not been a history of stability here," he notes. His solid scientific credentials have reassured scientists within the agency that they have a manager who understands their language and pursuits. Goldstein, a native of New York City, received his medical degree from New York University School of Medicine. A hematologist by training, he has concentrated for most of his career on studies related to air pollution and its health hazards and has published extensively on toxicity of ozone and benzene. His animal studies on benzene, which demonstrated carcinogenicity through inhalation, provided the impetus for the Occupational Safety and Health Administration under the Carter Administration to regulate the chemical. (This regulation was later overturned by the United States Supreme Court.) From 1977 to 1978, as a National Institutes of Health Fogarty fellow, he conducted research in England.

Goldstein is also fairly familiar with the workings of EPA through his advisory role to the agency during the past 7 years. Since 1978, he has served as a member of EPA's scientific advisory board and, since 1982, has been chairman of the agency's clean air advisory committee. When he was named to the job, there was some grumbling that he was a physician, not an engineer. But Goldstein undercut the complaints by hiring as his right-hand man Donald Ehreth, an engineer who has worked at EPA for many years.

Goldstein says that Ruckelshaus has made it clear that there will be a delineation of authority between the development of the scientific data and the setting of public policy. Goldstein says, "We give him the numbers and he decides what to do about it"—an arrangement that Goldstein says suits him just fine. He adds that Ruckelshaus "is interested in the science and he doesn't want the data sugar-coated."