The Sky Is Falling On Bob Abplanalp

By James R. Polk

Polk, a former Pulitzer Prize-winning journalist for The Washington Star, is now an investigative reporter for NBC News

WALKER'S CAY, Bahamas—Above Robert H. Abplanalp's private island retreat the sky is a pale, pure blue, and the sea breeze teases the big strangler fig tree by the poolside bar. But for Abplanalp the sky is falling on his business empire.

Abplanalp, the close friend who financed the purchase of San Clemente for former President Nixon, dominates the aerosol spray valve industry, now under attack as a threat to the ozone belt which hangs above the earth as a shield against the sun's damaging rays.

"I think it's all nonsense," grumbles Abplanalp, and he may be right: The proof isn't in yet. But the consumer scare has already cut into his business. Production fell by half in March, and Abplanalp has closed his headquarters plant in Yonkers, N.Y. ("You mean to tell me we're having an effect?" says a working housewife who has changed from a spray deodorant to a roll-on type solely because of the ozone controversy.)

Despite the public reaction, government scientists support the industry argument that it's too early to tell whether the chemicals used in aerosol sprays are reducing the ozone layer. A research expert with the Environmental Protection Agency says it would take at least three years to find out, adding: "If luck isn't with you, it may take four or five."

Prediction Problems

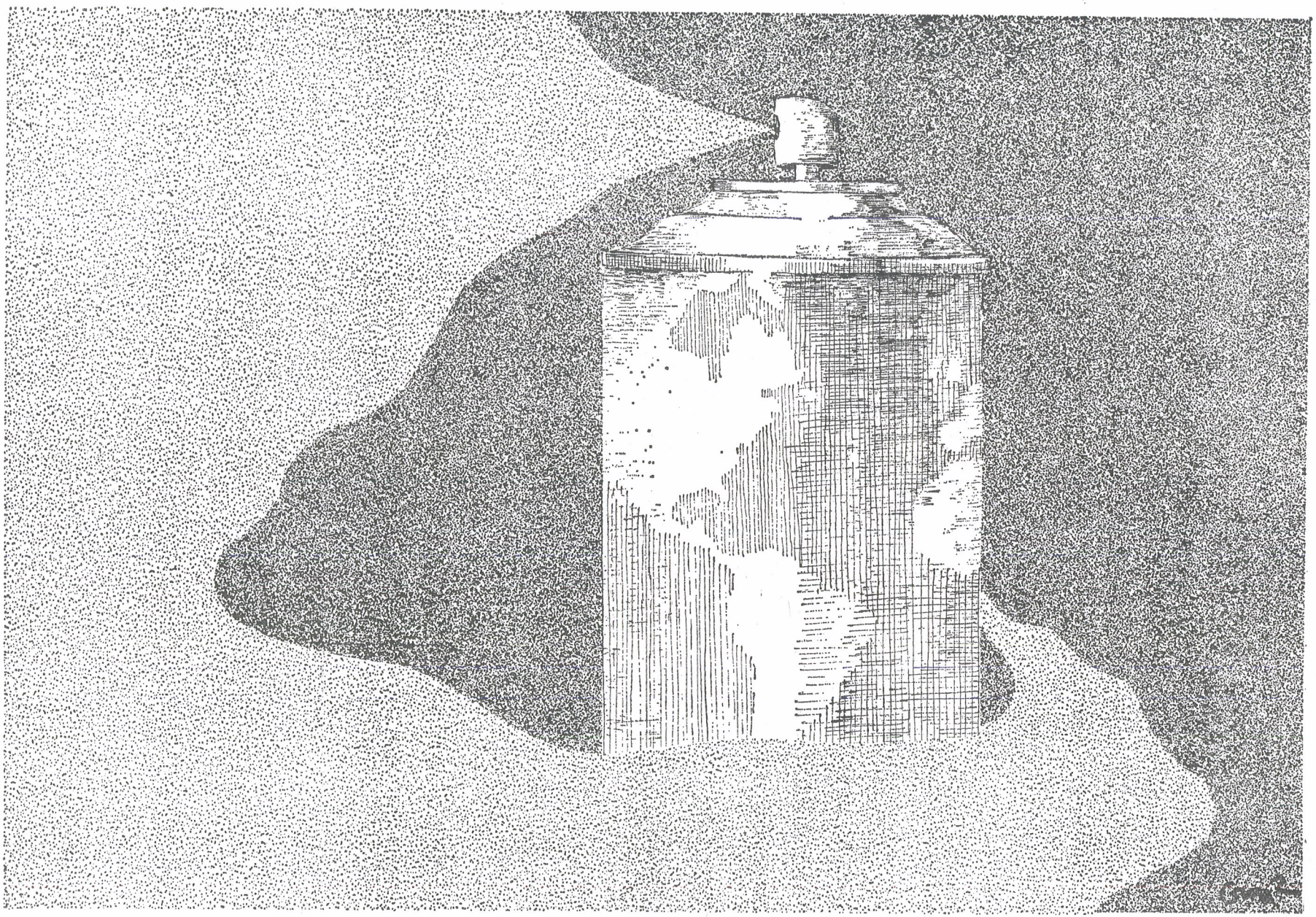
THE SUSPECT in this scientific puzzle is the chemical most widely used in hair sprays and deodorants to propel the liquid out of the aerosol can and turn it into a fine spray. The gases are properly known as cholorofluoromethanes, or more broadly as chlorofluorocarbons, but the shorthand language of the times has turned this into fluorocarbons.

Last summer a professor at the University of California at Irvine (which ironically is almost in the backyard of San Clemente along the Southern California coast) found that, under strict laboratory conditions, ultraviolet rays from the sun could break up the fluorocarbons, freeing the chlorine, which in turn would attack ozone, converting it to ordinary oxygen. This led to a mathematical prediction that the ozone shield against the sun's rays would be dramatically reduced by the end of this century, leading to a deadly surge of skin cancer.

But there are problems in these predictions. Studies show that the ozone level already fluctuates from day to night, from mild climates to the equator, from decade to decade. And now scientists have found chlorine in the stratosphere in such quantities to suggest that it may be part of a natural cycle that heals itself.

Abplanalp is asking that the government do the research to find out what is happening in the ozone layer and whether aerosols are really at fault. "(Expletive deleted), if it's true, I've got no place to hide, nor do my kids," Abplanalp said.

A reform organization petitioned the Consumer Product Safety Commission last fall to ban all aerosol sprays containing fluorocarbons. By law, the commission had 120 days to reply. That deadline passed March 20 without action. "This one happens to be very, very complicated," says a safety com-



By David Gunderson—The Washington Post

mission spokesman. The agency still doesn't know whether it has the authority to act, or whether that responsibility belongs to another arm of government.

Amid government confusion, the first step is always a study. That report is due June 15. More than a dozen agencies are involved. The report will try to decide what to do next and who will do it. The scientific sampling in the stratosphere is being carried out now by National Aeronautics and Space Administration and by the National Oceanic and Atmospheric Administration, which used to be known simply as the Weather Bureau. Neither agency has the regulatory power to act on the situation. That authority may belong to the EPA, rather than the Consumer Product Safety Commission. But the EPA research stops at 50,000 feet where the stratosphere begins. As part of the report, the Department of Justice is studying which agency should take the lead on the problem.

A staff report now pending before the Consumer Product Safety Commission has found there is not enough evidence so far to warrant an outright ban on aerosol sprays. The report says, "At the present time the commission has no basis for advising the consumer against the use of aerosols in the home. They must be presumed, unless proven otherwise, to be in compliance with applicable statutes." In the meantime, the research effort will go on.

Other Possible Villains

THE OZONE LAYER holds puzzles for science. It begins about 10 miles above the earth's surface—not much higher than the flight path of a Washington-to-Los Angeles jetliner. Ozone consists of three atoms of oxygen instead of the ordinary two in the air breathed. It filters the ultraviolet rays of the sun. But if that third oxygen atom is stripped away, the weather could change, crop seasons could change, and life itself could be altered.

Scientists have not been found lacking in suggesting potential dangers for the ozone belt. At one time or another, the supersonic transport, the use of nitrogen fertilizers and the possibility of nuclear war all have been depicted as deadly threats to the ozone band. And, according to industry, salt water and volcanoes may also be villains.

"I would guess every serious volcanic eruption puts more chlorine up there than the fluorocarbon industry does in 10 years," says Abplanalp.

Volcanoes give off chlorine gases, even when they are not active. And, as every schoolboy should have learned, the formula for the salt in ocean waters is sodium chloride. When water rises from the seas in the normal evolution of evaporation, that salt—and its chlorine content—is freed in the air. (Serious chemists, however, are confident that salt is not one of the villains; as one of the most stable compounds known to chemistry, it is not likely to break up and release its chlorine content.)

The EPA's Dr. Aubrey P. Altshuller, director of the Chemistry and Physics Laboratory at the National Environmental Research Center in North Carolina, says scientists now have found carbon tetrachloride—four chlorine atoms attached to a carbon nucleus—in the upper airways to such an extent that it cannot be explained as man-made. Asked whether aerosol gases were beginning to outweigh the content of natural chlorine in the reaches of thin air, Dr. Altshuller replies, "I don't really think anyone knows."

The ozone level is being monitored by balloons, by high-flying aircraft, by satellites. But to determine what is actually happening to the ozone, Dr. Robert Hehir, head of research at the Consumer Product Safety Commission, agrees with Dr. Altshuller that "it would possibly take three years. Three years is not an undue amount of time."

A Harvard University study found that, even if aerosol sales were halted immediately, the ozone layer could be reduced by 5 per cent by 1990. If aerosol use continues to grow, the damage could reach 30 per cent toward the end of the century, according to the scientists.

But Harvard's Dr. Michael B. McElroy, who headed the study, has favored more research. "We do have some time," he says. "It is not a matter of doomsday against tomorrow."

The Weather Threat

AS ONE MEASURE of what the percentages cited may mean, studies already show the ozone belt is 18 per cent thinner above Key West, Fla., than it is in New York City. This is natural. The ozone layer is denser in northern climates, thinner in tropical areas.

There is a statistical link between skin cancer and sun-warmed tropical zones. But this is not necessarily due to the thickness of the ozone belt, and skin cancer, moreover, is not a major killer. Its mortality ratio is the lowest among cancers. The number of deaths each year is far lower than, say, those from the highways, although no government study is under way yet to ban the automobile.

The big unknown spectre may not be skin cancer but the weather. The world's foods, for the most part, come from the temperate zones of the earth. With a searing sunshine streaming through a thinner canopy of ozone, would weather and crops be affected? Or will nature make its own adjustments?

There is a cycle to the density of ozone in the stratosphere. For about a dozen years, through 1971, the ozone count was growing. "It occurred during the peak years of aerosol production," Abplanalp remarks. Now the ozone shield is shrinking again as part of this natural rhythm, according to scientists.

A vice president of Abplanalp's company, Joseph C. Pizzurro, charges that research has yet to pinpoint what role chlorine plays in the ozone fluctuations in the actual reaches of the stratosphere, in contrast to laboratory conditions. "If the reaction does take place up there, it's been going on for millions and millions of years," Pizzurro says.

The riddle to be solved is whether the aerosol gases are hastening the downside of the current cycle beyond the point of normal reversal. Fluorocarbons are attacked by critics because, close to earth, they are virtually indestructible, unlikely to break down chemically for perhaps a century or more. Wind currents eventually carry the fluorocarbons into the stratosphere —where the earth-bound laboratory experiments have suggested that the utraviolet rays can separate chlorine to assault the ozone.

But, says the EPA's Dr. Altshuller, "the problem really extends beyond those who make fluorocarbons." What comes out of an aerosol can accounts for only about 1/25th of all the chlorine produced in this country each year. Chlorine, for instance, even is used in bleaching wood pulp to turn it into white newsprint for the newspaper industry.

Three Billion Cans

ABPLANALP'S business future is tied to the ozone dispute, even though his firm doesn't manufacture the chemical gases—DuPont is the gi-

ant in that field. But Abplanalp is president, chairman and sole owner of Precision Valve Corp., which produces more than half the spray valves used in aerosol cans throughout the world.

Abplanalp is an earthy, beefy man, now in his early 50s, who was operating a machine shop in the Bronx after World War II when he developed the low-cost, no-leak, plastic valve that brought on the aerosol age. His privately held company has reached $60 million in annual sales and has plants in France, Germany, Japan, Australia, Argentina, Mexico and South Africa.

The spray valve mixes the contents of an aerosol can with a propellant gas which turns this liquid into a mist and shoots it out into the air at the press of a button. Fluorocarbons are the most efficient, most popular propellant, and are used in more than half of all aerosol cans.

As a rule of thumb, those fine-spray cosmetic conveniences on the bedroom dresser, such as underarm deodorants and hair sprays, generally contain fluorocarbons. But whatever comes foaming out of other cans does not. Shaving cream, whipped cream and oven cleaners do not use fluorocarbons. Neither do such canned sprays as push-button paints, insecticides or room deodorants.

About 3 billion cans of aerosol products are sold each year in the United States. Around the world, nearly a million tons of fluorocarbons go hissing into the air annually to become part of the ozone controversy.

At present, it would seem the federal government is going to take time to get the answers before it decides whether to move against the aerosol empire. But in nine states the controversy has already landed in the lap of the legislature. A fluorocarbon ban is pending in the California senate, and New York's attorney general has asked state lawmakers for a similar halt.

And Abplanalp's closing of his Yonkers plant cost 300 workers their jobs though the office personnel kept their positions. The recession and rising operating costs were factors in the shutdown. But Abplanalp also fingered consumer fears. One large firm with a broad line of household products has reported aerosol sales are down more than other items in the recession.

A Better Invention

ABPLANALP SPENT Easter vacation at his private fishing club on this Bahamas island, one of a dozen small keys on which he holds a 99-year lease from the Nassau government. On a sun-toasted day, with whitecaps rolling over a coral reef beneath a cloudless blue sky, the end of the world seemed infinitely far away. But Abplanalp was moody, often frowning, muttering a couple of times that he has not been feeling well. His blunt wit was missing.

He is a man whose intelligence is well hidden. He still looks more at home in the Bronx than in his upper-crust suburb of Bronxville, N.Y. As a Nixon friend, his occasional host on these islands, and his landlord at San Clemente, Abplanalp was never an assertive figure in public. "My job always was to tell a couple of small jokes," he says. Yet the same man was the unbeaten chess champion of his Army unit in the war, and as an inventor he holds 56 patents.

One of those discoveries could be the answer for the aerosol business if fluorocarbons should be found at fault. Abplanalp couldn't go to sleep one night in his hotel room in Paris on a vacation trip in the mid-'60s. At midnight, he got up and began sketching his ideas on a yellow sheet of paper. He was finally interrupted by a knock on the door. It was dawn, time for breakfast. He turned the sketchings of his sleepless night into a patent on a more efficient spray valve, now called PreVal. It uses about one-third less propellant gas for the spray, it can be reused for any liquid, and it can work not only with fluorocarbons but also with hydrocarbons and other propellants.

The catch comes in the cost: The price is slightly more than double that for normal spray valves, so the new idea has not caught a large share of the market.

"It may cost a little more, but it will certainly save America from going back to the flit gun," says Abplanalp. (According to some people, the only way to kill a fly with a flit gun was either to drown it in the liquid or hit it over the head with the handle.) "If aerosols were wiped out, we've got a boomer," he adds. "You're never going back to squeeze bottles and flit guns."