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**SAN FRANCISCO'S
TRAGIC OIL SPILL
TRIGGERS SPONTANEOUS
COOPERATION
BETWEEN INDUSTRY AND
CONCERNED CITIZENS:
HERE IS THEIR STORY**



Barehanded Battle to Cleanse the Bay

By **PETER T. WHITE** Photographs by **JONATHAN S. BLAIR**
NATIONAL GEOGRAPHIC STAFF



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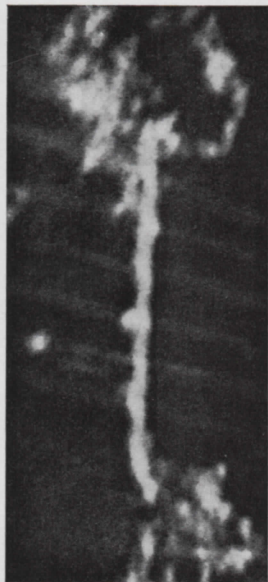
SHE COULD HARDLY WAIT to get her hands on the oil. Sloshing in on the tide, it looked and smelled like tar, and stuck more persistently than molasses. But the high-school girl with the long blond hair didn't stop to worry about that. "How could we just sit there while the beaches got polluted, and the birds were dying? We wanted to *do* something. We wanted to get *involved!*"

She typifies a whole army of volunteers from the San Francisco area, aching for action after the alarm burst forth on the air and in the headlines: **TWO TANKERS COLLIDE—GIANT BAY OIL SLICK.**

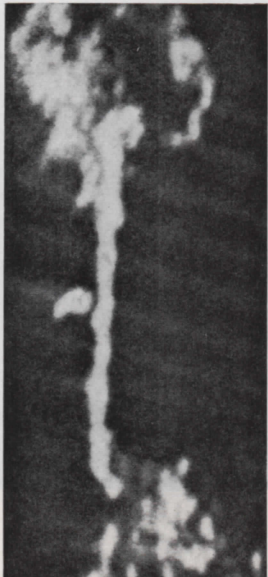
One of the oil fighters' main weapons was

straw. Put it on oil and it will absorb five to forty times its weight; the messy mixture can then be carried away. The Standard Oil Company of California, whose tankers spilled the oil, had 1,000 bales of straw ready and quickly corralled 39,000 more, under expertly prepared contingency plans.

But neither company nor government experts had foreseen the phenomenal response of the public: That such vast volunteer forces—uniting all ages and walks of life—would spontaneously organize themselves, work tens of thousands of man-hours, and put their stamp of unstinting enthusiasm on the great cleanup.



U. S. COAST GUARD



KODACHROME © N.G.S.



EIGHT HUNDRED and forty thousand gallons of oil! The crash that spilled it came in the dark, on one of San Francisco's foggiest nights. But radar enabled the U. S. Coast Guard to record the way it happened near the Golden Gate Bridge—the thick vertical line in the two radar pictures (above). At top, the dot left of the bridge is the *Arizona Standard*, inbound for the refinery on the bay; the second dot, to the right of the first one, seemingly stuck to the bridge, is the



WESTERN AERIAL PHOTO COMPANY © N.G.S.

Oregon Standard, outbound for Vancouver. Time: 1:39 a.m., January 18, 1971. Three minutes later (**lower**) the two dots have come together. Coast Guard radio alerted *Arizona* but could not raise *Oregon*.

No one was injured, but *Arizona's* bow was crushed (**left**) and oil pouring out of *Oregon* posed danger. Would it reach the Richardson Bay Wildlife Sanctuary, a stop-over for migrant ducks on the Pacific flyway? Would oil ruin the wintering grounds of tens

of thousands of shore birds in San Francisco Bay? Luckily the tidal range was narrow that day; half the tidal flow was over at that hour, and so the oil flooded only 4½ miles into the bay. But after ebbing 7 miles out to sea, it flooded back onto the coastline, north beyond Duxbury Reef and nearly as far south as Pescadero Point—trapping thousands of sea birds. Oil had blackened the Golden Gate (**above**) 12 hours after the collision. By then the cleanup was in full swing.



STRAW BY THE TON dropped onto the oil from a U. S. Army helicopter (above) and from scores of boats and barges. Soaked with oil, the straw was picked up by barge-borne cranes, by men with pitchforks in dozens of small boats, by eager volunteers on the beaches. Bulldozers piled it into great gooey masses. Mechanical loaders hoisted these piles onto dump trucks that drove them away, to decompose in pits and garbage dumps. On the water, vacuum hoses sucked globs of oil into tank trucks afloat on barges or parked along the shores.

Most of the equipment was mobilized by

Standard Oil, whose board chairman, expressing regret for the collision that caused the spill, had pledged "all possible resources, everything necessary to restore the bay and the beaches to their normal condition." The company rented nine helicopters, fielded 155 two-way radios to coordinate the work, and assigned seven telephone operators to take claims for damages. Many pleasure boats had to be repainted; on some, the removing of oil stains stripped off the paint as well.

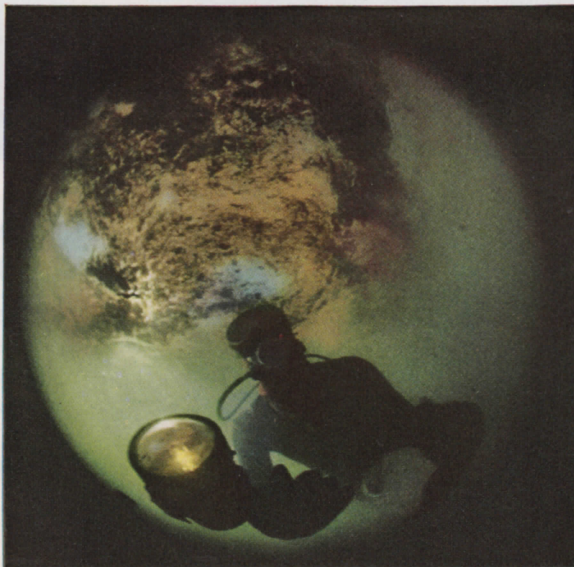
The oil spilled was the heavy type called Bunker-C, used as ship fuel, which must be kept above 130° F. if it is to flow freely. In



KODACHROMES BY JONATHAN S. BLAIR (ABOVE) AND AL GIDDINGS © N.G.S.

the cold water it congealed, but some volatile components mixed with water; the full effect on shellfish and other delicate links in the marine food chain may not become apparent for years.

Reported a scuba diver (**right**): "Even where there were no heavy oil patches, I found an iridescent film—lighter parts of the oil. Soft black globules, some no larger than golf balls, floated a foot or so below the surface." When he got home and washed his neoprene diving suit, it fell apart; the glue that held the stitching in place had been dissolved by the oil.





CLEANUP VOLUNTEERS worked into the dusk near the San Francisco Marina with pitchforks and rakes, latching onto the oily straw as soon as it hit the beach. Aboard the tug a Standard Oil employee pushed straw shoreward with a pole; on the fantail a company supervisor with a two-way radio watched to see what materials the volunteers might need. More pitchforks? The total provided



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was 2,100. Recalls a man who helped coordinate the outpouring of volunteers: "That first day, on Monday, they were mostly long-hairs, the hip, the 'street people,' as they sometimes call themselves. They had time on their hands, they responded right away. By Wednesday the 'straight people' had fully joined in—businessmen, bus drivers, they'd arranged to take time off. Schools let youngsters out of

class to help. Some retired people out there were so old they had trouble walking on the sand. The company hired a lot of construction workers, so you saw hard-hats too. It sure was a real American cross section."

Work continued through the nights, under portable mercury-vapor lamps from the Army. Food was contributed by housewives and public-spirited hamburger stands.



SOME WADED into the chilly water to spread more straw and to bring out oily armloads. "The quicker you get it the better," said a girl wet up to her neck. "Once it hits the rocks on the shore it's so much harder to get off." Globbs three feet long and a foot wide came floating in, many so weighty that they had to be wrenched into manageable pieces by hand. Said another girl, "You sure use all your muscles."

The oil company employee supervising cleanup operations beamed with admiration. "You couldn't pay a person to do this job, to go into the water the way those kids did. None complained of being cold. The only time I found one unhappy was when we couldn't get them straw fast enough."

On Agate Beach (right), volunteers picked up oil-saturated straw and carried it in cardboard boxes to waiting trucks. Here gummy tides coated and choked the mollusks that cling to the rocks.

Nearby at Bolinas (below), hundreds on the beach sawed and hammered day and night, building a many-sectioned boom to protect the entrance to Bolinas Lagoon, a sanctuary for egrets and blue herons.

The first section was ready for floating, and the bearded young man in charge shouted, "You want a bulldozer to do it?" From the dark a voice shot back: "Let's pick it up!" Quiet settled, everyone breathed in unison. One. Two. Three. Everyone lifted. "Beautiful," said another bearded participant. "Man, it was a good trip."



KODACHROME (UPPER) AND EKTACHROMES © N.G.S.



TO HELP the oil-crippled birds became the emotional commitment of many volunteers—society matrons, professors, students by the hundreds. And no wonder, for what had befallen the birds was shocking.

Half were western grebes, a fifth were scoters, and the rest included 27 species—loons, scaups, and common murre. They all sit on the sea and dive for their food. Diving into clean water, they came up into black oil. Unable to fly with oil-heavy wings, hopelessly trying to preen, many drowned. Others, pounded by surf, wound up as shapeless blobs washed onto a beach, their bodies growing cold, their insides ravaged by swallowed oil. Some men, hearing the choked cries of distress, sat down and wept.

Beached birds with life still in them were wrapped in rags and driven to dozens of



EKTACHROMES © NATIONAL GEOGRAPHIC SOCIETY

cleaning stations, including Fort Baker's gymnasium (where a loon arrives to be bathed, **above left**). Standard Oil supplied 22,500 gallons of one widely used cleaner: warmed, crystal-clear mineral oil—highly refined petroleum, commonly found in nurseries as a balm for babies' skin.

Birds such as the scoter (**right**) received several mineral-oil baths and were dried in a mixture of flour and corn meal. Then off they went to collection points, such as the warm basement of the lion house at the San Francisco Zoo (**above right**). To fight dehydration, starvation, and infections, a syringe force-fed a mixture of water, bits of fish, antibiotics, and vitamin B₁.

But many birds soon died. Experts predicted survival for no more than three to five out of a hundred.



UNDETERRED by unfavorable prognoses, volunteers created a unique treatment center for hundreds of birds in a University of California warehouse in Richmond. There, in a plastic pool embedded in a makeshift plywood enclosure (**below**), a grebe could swim again after three weeks of intensive care. A student in the corner makes notes on the bird's behavior; under a sun lamp, loons, gulls, and murren preen after their swim.

But how long until a grebe could return to the sea? A few weeks? Several months? Not even zoologists could tell for sure. He must overcome not only the toxic effects of the oil and the shock of being handled by people. His feathers must regain their ability to shed water lest he become waterlogged and drown; the down

beneath those feathers must once again be able to keep him warm, or he might die of exposure. Would the bird have to await new feathers, after molting?

Simply keeping grebes alive in captivity posed a challenge. "So little is known about them," said a supervising veterinarian at the Richmond Center. "The kids try everything they can think of." Example: playing stereo recordings of surging surf; it seemed to calm the grebes. Standard Oil paid \$900 a day for medicines and food, mostly live shrimp and minnows. Grebes at the San Francisco Zoo also soon switched to live fish, served in pans (**right**).

Penned in small groups, the Richmond Center's birds received individual attention. "You get attached to one," a girl said, "and



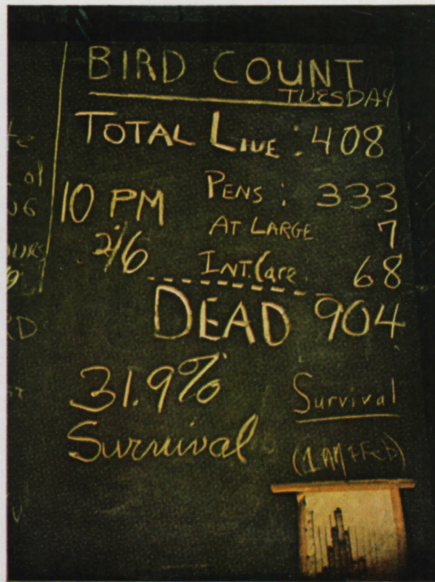
then you want to come back and see how he is." A college student, asked how he could serve daily and yet keep up his academic work, replied, "I can't. But this is more important." Like other young volunteers, he kept detailed records of the progress of many individual birds—valuable material for the continuing research into the care of oiled birds.

Officials of California's Fish and Game Department pointed out that the birds are a self-renewable resource. Barely half the grebes hatched in one year are likely to survive into the next; thus the



more that are saved now, the fewer will probably survive out of next year's hatch, because their environment can support only a limited number. Wouldn't it be best to kill the seriously contaminated birds humanely?

Richmond Center volunteers bristled at such talk. Proud of the unexpectedly high survival rate chalked up on their scoreboard (**below**), they cheered when the first grebe to be released flew off to the sea, only a month after that initial swim in the pool. To them, their birds had become symbols. As a young housewife put it, "When we help them we are fighting for all of us, to save our environment."



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TECHNOLOGY to foil the oil included plastic booms, shown protecting the rocky shore at Sausalito (**left**). A Standard Oil employee maneuvered the oil shoreward, through a gap between boom sections, toward a suction hose pumping it into a tank truck.

Inside San Francisco Bay (**below**), a chartered cabin cruiser pulled the long line of booms to encircle clumps of oil-soaked straw. It would be picked up with pitchforks by the crew of the barge in the distance.

Moving slowly through a patch of oil (**below right**), a self-propelled barge towed a "skimmer" fastened to its side. This is a raft with suction hoses. The oil it sucked up, mixed with water, flowed into the barge to be separated later at the refinery.

Some techniques fizzled. Shredded Styrofoam, sprinkled on oil, proved harder to pick up than the oil itself. But federal officials agreed that a good job was done, considering the present state of technology. Had it not

been so, federal law would have held Standard Oil liable for cleanup costs. As it was, the company spent more than \$4,000,000, part of which would be recoverable through insurance.

Noted the Federal Environmental Protection Agency: "When a passenger liner rammed a tanker in the Golden Gate in 1937, cleaning up was left largely to nature. At Santa Barbara in 1969 the work was done with the help of inmates from a correctional institution. This time so many volunteers showed up that nobody knew how to use them all efficiently. In fighting oil spills in the future, concerned citizens will have to be assigned a major role."

Looking beyond San Francisco, volunteers are already compiling a manual based on their experience. The idea is to help concerned citizens anywhere go into action efficiently and quickly, should some similar catastrophe threaten their community. □

