tiveness and safety for marine life? Lederman replies, "We will probably eventually make a list of the things we find satisfactory in the laboratory. Yet we try not to be a product-endorsing agent, in the sense of a GOOD HOUSEKEEPING seal of approval."

Even after five years of stepped-up efforts, Art McKenzie of the Standard Oil Co. (New Jersey) in New York City admits, "There are no fancy, ingenious inventive methods for getting oil off the water. It is as difficult to get oil off the water as it is to get smoke back into the smokestack. It looks easy. But try it sometime in the kitchen sink. And when oil washes ashore, and you use shovels, straw, dispersants or other chemicals, it is a tough, dirty, highly expensive job."

Considering everything, though, most authorities on oil spill cleanup concur that progress has been made. Says Ketchel, "I'd say in the last year or two there have been significant advances in technology, in the development of equipment and procedures for dealing with spills." And Haxby: "I think we are making progress. I don't claim we have all the solutions yet, but we certainly have more than when we started on it."

Even with progress in cleanup technology, though, spills themselves don't seem to be diminishing. There were 8,496 spills reported last year, according to EPA and Coast Guard figures. It is easy to see why prevention of spills is considered even more crucial than cleanup. Efforts are under way.

The Torrey Canyon and other accidents, for example, prompted the National Industrial Pollution Control Council to recommend to the U.S. Government that it set up, in the major ports of the world, traffic control systems similar to airplane control systems. IMCO has established traffic lanes in international waters, so that ships will avoid collisions. Standard Oil (New Jersey) has set up a center in Grenoble, France, to train ship captains how to avoid collisions with other ships. IMCO is looking into other ways to upgrade officers on the world's 4,000 tankers and 46,000 dry cargo ships.

About 80 percent of the world's tankers are now trying to avoid operational pollution. This release results when the tanker carries water instead of oil on its ballast passage and empties this oily water into the ocean when it is ready to load up oil again. Now, before the ballast water is poured into the ocean, the oil is separated out. Some tanker owners are currently experimenting with cleaning tankers with oil rather than with water.

Next spring, IMCO is meeting in Brussels and should come up with more international treaties tightening oil spill prevention—for example, the amount of oil a tanker might discharge during cleaning on the high seas.

Only time will tell whether such preventive methods reduce spillage. Says McKenzie, "I think we are making progress, but it's hard to measure." □

A House committee's critical appraisal of oil spill regulation

At 2:45 a.m. on April 25, 1971, bargemen loading diesel oil onto their barges from a Texaco refinery at Anacortes, Wash., notified the Coast Guard that they had noticed a leak. A Coast Guard representative came, inspected the scene and found only slight traces of oil. On April 26, the Coast Guard closed the case. But new reports came in indicating that greater quantities of oil had been spilled. A 4 p.m. on April 27, Coast Guard officials realized they had a serious problem on their hands and they convened a "response team," made up of themselves, officials of Texaco, of the barge companies and of the Environmental Protection Agency. Texaco admitted at the meeting that 232,860 gallons of diesel oil had been lost into Puget Sound and various straits and channels connected with it. By this time (38 hours after the spill was reported) it was too late for containment. About 1,000 birds (grebes, scoters, loons and others) were affected, with an 80 percent kill of the 360 birds treated. There was "evidence of environmental damage" more than 14 days after the spill, EPA reported.

This account is taken from a report of the House Committee on Government Operations, "Protecting America's Estuaries: Puget Sound and the Straits of Juan de Fuca," issued Sept. 18.

The report deals only with the Puget Sound area, a biologically rich estuarine area "beginning to feel the pinch of pollution." But many of the conclusions of the House committee are applicable nationwide. Here are some of them:

- The Army Corps of Engineers is supposed to get clearance from the Fish and Wildlife Service before it issues permits for waste discharge into waterways, but has failed to do so, and instead has resumed an earlier policy of assuming absence of comment from FWS means the Interior Department agency approves. The Corps in 1971 issued a waste discharge permit to Atlantic-Richfield Co. to dump wastes into the Strait of Georgia in Washington, without even preparing the required environmental impact statement.
- "Although the Coast Guard reported 8,496 oil spills in the nation in calendar year 1971, it has not vigorously enforced the Refuse Act of 1899 or the civil penalty provisions of the 1970 [Water Quality Improvement] act in all cases of illegal discharge."
- Delay by EPA and the Coast Guard in regulating sewage discharges from ships may result in the United States failing to meet the timetable of a U.S.-Canadian agreement on such discharges.
- "Some Interior Department field representatives, despite their lack of technical expertise, have overruled the department's fish and wildlife experts on several occasions."
- "The EPA's enforcement efforts against polluters in the Puget Sound area have been weak."

The report is not entirely critical. For instance, it says, "The Coast Guard's new proposed regulations concerning oil transfer facilities and vessels are an excellent step toward preventing oil spills."

It seems clear that prevention of oil spills may be the only real solution. The report indicates that prevention may have two broad aspects: First, provision for safeguards in the storage, transfer and transport of oil and, second, imposing some limits on an oil-hungry economy.

Refinery capacity in the Puget Sound area increased eightfold from 1955 to 1972. Coast Guard Rear Adm. Joseph J. McClelland told the House committee that the volume of crude oil shipped into the Puget Sound area by the year 2000 will be 31 million tons, "two and a half times" present levels.

Much of the growth is expected to come from supertankers bringing Alaskan North Slope oil from Valdez on the south coast of Alaska. The super-tankers are huge and unwieldy, and a University of Washington team of economists and engineers has predicted that an eventual spill from one of the huge ships into Puget Sound is a certainty (SN: 5/20/72, p. 325). The team members say the ecological consequences could be irreversible.

—Richard H. Gilluly