
Epilogue

The *Exxon Valdez* spill was 265 times larger than the average spill that the Coast Guard deals with on a day-to-day basis and occurred in one of the most remote areas of the United States. The capability to respond adequately to a spill of that magnitude in that place simply did not exist. Prince William Sound was an area with a potential for a large spill, but there was a feeling that it would not happen at Valdez. Valdez had roughly nine thousand ship transits during its fourteen years of operation. Eight to nine billion gallons of oil had been shipped out, and the largest spill prior to 1989 was 2,000 gallons which occurred at the dock. Thus the reaction to the 24 March spill was one of disbelief. In discussing the complacency of Alaska, Exxon, the federal government, Congress, and the state of Alaska, Governor Cowper compared it to a nuclear attack — everyone realizes that it is possible, but it is not very likely, so they divert their attention to more pressing problems.¹ The General Accounting Office called the response “inadequate” and indicated that the *Exxon Valdez* and other recent oil spills had raised concern about the capability of current oil containment and recovery technology.²

As a result of the Alaska spill, the Coast Guard has taken certain initiatives. It is currently trying to define better the organization that the federal government should put in place in a catastrophic spill and the role not only of the Coast Guard but of other agencies. The Coast Guard had memorandums of understanding in place with the Navy that helped provide much of the equipment that Exxon requested. It is now in the process of reviewing its agreements with other agencies and revising some. Coast Guard officials plan to clarify their new relationship with DOMS.

In addition, the Coast Guard is evaluating both its existing worldwide pollution response equipment and new

equipment and techniques that are available and its strike team's adequacy. It is developing legislative proposals on merchant vessel personnel; reviewing all national, regional, and local contingency plans; and studying the need for additional authorities under the Clean Water Act and the Port and Tanker Safety Act. The Coast Guard hopes to establish a "workable disaster management type super response mechanism" for use in other catastrophic spills.³ USCG officials would like more authority to direct the activities of the spiller without federalizing the cleanup.

The Coast Guard has also stepped up its effort in oil spill research and development. After the *Argo Merchant*, *Torrey Canyon*, and *Amoco Cadiz* spills, interest in cleanup technology increased. Between 1972 and 1984, the Coast Guard spent roughly \$68 million a year on oil spill research and development. Other agencies also spent significant amounts. After 1984, however, interest in research and development declined and the Coast Guard's research and development budget dropped to \$4–\$8 million a year. The *Exxon Valdez* spill sparked renewed interest, and the Coast Guard research and development budget climbed to \$150 million in fiscal 1989.⁴

On 26–27 September 1989 the Coast Guard sponsored an interagency planning workshop on oil spill research and development at the University of Connecticut campus in Groton. Thirty-six participants from government and private industry met to exchange information, strengthen working relationships, and initiate the development of a coordinated national plan for oil spill research and development. William Rushing from the Research and Development Directorate represented the Corps, and because DOD sent no representative, he unofficially served in that capacity as well. Secretary Skinner directed the Coast Guard and representatives from other federal agencies to develop a document on federal plans for future research and development. The draft document, which includes Corps items, will be finalized in 1991 and submitted to Congress. A Department of Transportation research and development committee was created to coordinate research among agencies and present a plan to Secretary Skinner. Rushing is the Corps' representative on that committee.

The Alaska operations have led to reassessment and planning not only by the Coast Guard but also by the Corps. Corps officials, support staff, and the dredge crews have made recommendations to improve the effectiveness of the dredges. They first emphasized the need for an early decision by HQUSACE to get the dredges to the oil quickly before it is widely dispersed and weathered (though not so quickly that there is still a risk of explosion from the volatiles left in the oil). In addition, the Alaska operations illustrated that reconnaissance capability is essential to keep auxiliary vessels from wandering aimlessly. Corps personnel recommended that the Corps get certification for the helipad on the *Essayons* and that operators use a coordinate system to direct the dredges. They also suggested that booms and a barge be dedicated exclusively to the Corps dredge, as well as a fishing vessel or two to put out the boom.

The dredges also need to have the proper equipment. The Corps should purchase 84-inch containment booms and cold weather suits that it could put on-board if needed. Oil recovery equipment could either be carried on the dredges or stored in centralized warehouses. Carrying the equipment on the dredges might create problems because of space limitations and might result in a vessel that is capable of doing a little of everything but nothing well. Some officials recommend storing 84-inch booms and pumps in centralized locations on each coast. Furthermore, if the Corps brought all the equipment and stored it, someone would still need to exercise it and make sure that it was the kind that was needed. Different types of spills require different equipment, and the Corps should have the flexibility to go to various vendors to get what it needs. Rather than actually purchasing and storing equipment, the Corps could keep a list of vendors/suppliers that it could call or have a memorandum of understanding with the Coast Guard or Air Force to fly equipment for the Corps with two to four hours notice.

Finally, the Corps needs to develop better off-loading procedures, including perhaps a way to put the oil through the dragarms directly into a barge, bypassing the hopper completely. The Corps is presently studying ways to retrofit the dredges to make them more effective at recovering oil. The Marine Design Center has a major role in this feasibility study. The Corps, however, has no legislative

authority to make changes to the dredges, only to study them.⁶

It is cheaper and environmentally safer to catch the oil while it is on the water than after it reaches shore. The Corps has available four government-owned dredges and fifteen industry dredges that are part of the reserve fleet that represents the potential for quick response in most areas of the nation. All Corps minimum fleet dredges and industry hopper dredges are monitored for their location on a weekly basis. The large hopper dredges are usually within four days sailing time of any area of the continental United States.

In addition to the efforts to improve the dredges' effectiveness, CRREL continues its remote sensing activities. CRREL has processed the Innotech MEIS-II multispectral, Landsat Thematic Mapper, and certain NOAA data and demonstrated the usefulness of its equipment. Without ground verification it has not been possible to determine explicitly what the various image segments are showing. To gain some criteria for interpreting the Innotech data, CRREL had Alaska District send some oil samples to the Engineer Topographical Laboratory for spectral analysis, and CRREL completed some basic spectral measurements for oil, oil contaminated soil (simulating beach sands), and uncontaminated soils. That data indicates that detecting oil contaminated beaches will not be straightforward because oil seeps into the soil and the spectral signature becomes a mix. CRREL also sent an analyst to Prince William Sound to make spectral measurements on the beaches. She visited the University of Alaska, studied the image data there, and brought back additional samples of crude so that CRREL could do spectral analyses.

With additional resources devoted to the remote sensing program, CRREL expects to refine the Corps' remote sensing capability in 1991. Although it is too late for the *Exxon Valdez* spill, the work will provide the Corps with a greater response capability in the future. One ongoing CRREL project seeks to define a practical and optimum package for remote sensing of oil spills. The goal of the second project is to develop data recording and rapid data management techniques to exploit remote sensing for emergency operations.⁷

Although the planning and research efforts of the Coast Guard, the Corps, and other agencies are promising, Coast

Guard officials and others warn that there is no panacea, no simple method that will greatly improve our capability to clean up a spill. Rather, USCG Captain Richard Larrabee noted, "We continue to stress the area of prevention as the primary means of dealing with oil spills such as the *Exxon Valdez*."⁸ After studying the Alaska operations, GAO analysts also concluded that the nation's limited ability to deal with large spills such as the *Exxon Valdez* indicated a need for greater emphasis on prevention.⁹