

THE *NESTUCCA* MAJOR OIL SPILL: A CHRISTMAS STORY

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ABSTRACT: Near midnight on December 22, 1988, at the entrance to Grays Harbor, Washington, the tug *Ocean Service* breaks its towline to the barge *Nestucca*. In maneuvering to recapture the drifting barge, which is loaded with 70,000 barrels of Bunker C oil, it punctures one of *Nestucca's* cargo tanks. Pollution control forces are called into action. This narrative tells just how many people and organizations were involved in minimizing damage in two countries and credits their success to planning, preparedness, and cooperation.

Once upon a time in the great Pacific Northwest there lived three on-scene commanders (OSCs). There was one federal OSC from Portland, Oregon. There was another federal OSC from Puget Sound, Washington. And then there was the state OSC from Olympia, Washington, who became a legend in his own time. Yea—his reputation became known far and wide—yes, even unto Canada. They lived a happy life, these OSCs, for nearly eleven months of each year. Yet they knew, each one of them knew, that an offering to the Keepers of the Sorbent must be made annually. As legend had it, this offering came due during the most inopportune moments of holiday cheer and family gatherings. This is the story of one such moment on December 22, 1988. One moment, one event, that interrupted and redirected the lives of many.

It was a dark and stormy night. It was winter cold on the Pacific Ocean when, plowing through the seas, came the tug *Ocean Service* towing the good barge *Nestucca*. All was well—for a time. Then the monotonous, yet peaceful, chuga, chuga, chuga of the tug was disturbed by the sudden parting of the heavy towline and the casting adrift of the good barge *Nestucca*. Frantically, yet demonstrating the skill and courage of Pacific Northwest sailors, the crew of the *Ocean Service* maneuvered to retrieve their lost cargo. Deftly coming alongside the heaving barge, the crew, their very lives in extreme danger, tried desperately to reconnect the tow. Up and down they surged, trying again and again. Then, just as they thought that they would succeed, the *Ocean Service* was set into the *Nestucca's* sideshell, holing the barge's number one starboard cargo tank.

And lo, there was a great darkness that appeared over the deep. A major Bunker C oil spill was in the process of occurring.

As the OSCs slept, little did they know that it was once again time to ante up and make right the offering to the Keepers of the Sorbent. So many things to do, so many people to call, so many decisions to make. An epic story of emotional highs and lows, successes and failures, pathos and humor—featuring a cast of thousands.

Did the good guys win in the end? We shall see. But let's go back in time, to the very beginning of that fateful voyage.

In the beginning

On December 21, 1988, the tug *Ocean Service* leaves the British Petroleum dock in Ferndale, Washington, towing the barge *Nestucca*. The barge is loaded with over 70,000 barrels of Bunker C oil. The tug and barge are headed for Portland, Oregon, with a stop scheduled along the way in Aberdeen, Washington. Both vessels are owned by Sause Bros. Ocean Towing Co., Coos Bay, Oregon.

At 11:00 p.m. on December 22, as the *Ocean Service* nears Grays Harbor on the coast of Washington, the tug *Janet R*, with an empty wood chip barge in tow, offers a report on bar conditions of "approximately 10 feet with one occasional bigger one." More accurate reports later indicate wave heights of up to 14 feet with occasional 16-foot breaking swells, with winds of 10 knots out of the west.

As the tug prepares to enter Grays Harbor at about 11:15 p.m., it shortens its towline to cross the bar. During this maneuver, the towline between the tug and barge snaps. As the barge drifts free, an *Ocean Service* crewman radios the *Janet R*, about the problem. A private radio operator monitoring vessel traffic in the area notifies the Coast Guard in Grays Harbor of the incident approximately two nautical miles west of the Grays Harbor entrance. While en route to retrieve the barge, the *Ocean Service* observes the wind increasing and the barge drifting rapidly toward the harbor jetty.

Early in the morning on December 23, amid fears that the barge might go aground, crewmen from the tug board *Nestucca* to try and reattach the towline. During the process, a swell lifts the *Ocean Service* into the barge and damages its rudder. The port rudder stock is bent forward almost 30 degrees and for a short while after the collision, the rudders will not move off 10 degrees left rudder. A hole is punctured in the number one starboard cargo tank of *Nestucca* and oil begins leaking from a gash 6 to 7 feet long and 10 inches wide just above the waterline. As the seas toss the barge severely, the cargo sloshes out upon the ocean and is systematically replaced by sea water. The *Janet R*, arrives shortly to assist *Ocean Service*. Initial estimates of cargo loss are sketchy at best, because of darkness and on-scene weather. The first reported estimate is 42,000 gallons. The damaged tank holds approximately 252,000 gallons (6,000 bbl) of Bunker C oil.

Despite the heavy seas, the *Nestucca* seems to be holding up or anchoring on its towing gear. Observing this, the *Ocean Service* decides to retrieve the towing chain with its orville hook rigged to a 600-foot nylon emergency hawser. On the first pass around the barge the port bridle leg is hooked, and the grounding of *Nestucca* is averted.

The tug master of *Ocean Service* informs the U.S. Coast Guard (USCG) that he will not attempt to cross the bar at Grays Harbor because of the severe weather condition, his jury-rigged towline, and the tug's steering problems. The master indicates that he plans to head

to sea, then possibly southwest to enter the Columbia River. He also conveys his intentions to meet a larger tug for assistance in crossing the bar at the Columbia River entrance.

The *Janet R* transfers its tow in preparation to assist and arrives on scene at about 2:00 a.m., finding the *Ocean Service* and *Nestucca* moving southwesterly out to sea. About this time, *Janet R* notices and informs *Ocean Service* that *Nestucca* is leaking oil and there is considerable oil already in the water. Coast Guard Station Grays Harbor takes note, which leads to the USCG briefing the state of Washington. Washington indicates that they will initiate beach patrols and will inform the Coast Guard if oil begins coming ashore.

Washington Department of Ecology concurs with the Coast Guard that it is inadvisable to have *Nestucca* towed into Grays Harbor for the following reasons:

- The unknown extent of structural damage to the barge, and the uncertainty of the vessel being under a safe tow;
- darkness;
- the unknown rate of product loss;
- the unknown nature of the product;
- inadequate facilities in Grays Harbor to deal effectively with a major oil spill; and
- the environmental sensitivity of the harbor.

The vessels continue to move to more stable waters some 20 miles offshore as temporary repairs are made. Throughout this entire decision process, the Coast Guard and the Washington Department of Ecology are in continual contact and mutual agreement.

By 5:00 a.m. on December 23, the *Ocean Service* has rigged the remaining tow wire on board to the emergency hawser as it tows the barge offshore toward the Columbia River. *Janet R* remains in escort and, with sea conditions abating somewhat, at 7:30 a.m. she removes the two *Ocean Service* crewmen from the *Nestucca*. Not until that night do crewmen reboard the *Nestucca* to use a damage control kit dropped earlier by a Coast Guard helicopter. The temporary patching of the sideshell is finally accomplished by 1:00 a.m., December 24, and the barge is then towed to Astoria, Oregon, for permanent repairs. By now, the estimated amount of cargo lost is 70,000 gallons.

Not until a week later is the exact loss determined. On December 31, following the off-loading of *Nestucca*, a revised estimate provided by British Petroleum, the cargo owner, shows that some 231,000 gallons of Bunker C oil had been lost.

The handoff

Upon notification of the incident, the commanding officer, Marine Safety Officer (MSO) Portland assumes the role of federal on-scene coordinator (OSC). The first oil appears on the coast in the Ocean Shores area and inside Grays Harbor. The state, local, and federal emergency operations center is established in the Ocean Shores City Hall and a bird rehabilitation center is quickly established in Hoquiam Middle School with oversight by U.S. Fish and Wildlife Service. Global Diving and Salvage, Inc., Seattle, Washington, is hired as contractor to conduct local cleanup operations. The International Bird Rescue Research Center is hired to conduct the bird rehabilitation effort. Throughout the entire cleanup effort, the command post and bird rehabilitation centers are relocated to best suit the needs of the OSC and cleanup efforts.

Throughout the first two weeks of the cleanup operation, MSO Portland retains the OSC, even though substantial amounts of oil are impacting MSO Puget Sound's area of responsibility. MSO Puget Sound assists by providing monitoring personnel and a command post liaison. As the oil continues to impact large expanses of beach, difficulty of access to affected areas is slowing the cleanup operations a great deal. Contractors are forced to transport crews and material by helicopter since there is very little road access, and the beach terrain consists of large rock formation and cobble.

By January 4, after a steady northerly migration, significant amounts of oil begin to impact the Canadian shoreline at Long Beach National Park along the southernmost coast of British Columbia. Because of this turn of events, Canadian authorities request and eventually invoke the Canada-United States Joint Marine Pollution Contingent Plan (CANUSPAC). And on January 5, in accordance with the terms of that agreement, commanding officer, MSO Puget Sound, relieves commanding officer, MSO Portland as federal OSC.

To ensure continuity, MSO Portland's cleanup manager remains on the job and continues to work in concert with the cleanup manager from MSO Puget Sound. This partnership proves effective and greatly enhances the cleanup efforts of MSP Puget Sound.

Upon receiving direction to assume OSC, MSO Puget Sound sets into motion a series of actions aimed at affecting, not only an orderly transition, but also a more energetic response. The magnitude of the spill is far greater than originally thought. Notification of the transition is made to federal, state, and county agencies. The responsible party, Sause Bros., Inc. and their cleanup contractor, Global Diving and Salvage, are consulted. The director of emergency management for Clallam County opens the doors of their emergency operations center in Port Angeles, Washington, for a meeting of all parties to clarify the elements of the transition and to review and reestablish operational priorities. Additional support from the Pacific Strike Team is summoned to increase shoreline monitoring effectiveness and a public affairs team is brought in from Coast Guard District Thirteen. A joint information center is established with the state of Washington, facilitating an increased and orderly flow of factual information to the news media. Close contact is established with the tribal nations existing along the shoreline of Washington's Olympic Peninsula. Liaison is immediately established with Canadian authorities and the communication/coordination processes called for in the CANUSPAC Plan are underway.

The last major element of transition is the command post—its location, as well as the most effective organization structure. MSO Puget Sound employs a structure developed by them and tested under fire during the course of two major spills within the previous two years. It is also familiar to the key state and federal agencies who train together and work together during response operations. It is decided to relocate the command post to coincide with the focus of the response operation which is now farther north. Indeed, much of the activity now centers around the small town of La Push, Washington, where a significant portion of oil-contaminated beach lies. Additionally, and perhaps most importantly, it is also the location of Coast Guard Station Quillayute which, naturally, offers an ideal command and control facility. (And darned good hot coffee!!) The command post is established at Station Quillayute. The operations center at Ocean Shores is retained as the bird rescue center and to coordinate remaining beach cleanup within MSO Portland's zone.

A new day—a new way

The command post runs exceptionally well. The camaraderie and esprit de corps among the many agency reps is vital and strong—evidence of much prior interaction in planning, training, and working together during a multitude of previous operational situations. An upbeat attitude and sense of purpose are pervasive throughout the operation, fostering successful group dynamics and problem solving acumen despite long hours and nasty winter weather. The responsible party and their cleanup contractor are instrumental in nurturing a proactive command post organization. The Sause Bros. rep is seemingly everywhere—wading into every issue, out on beach cleanup sites, up in the helicopter, and doing the same for a period of time while visiting the Canadian operation. Global Diving and Salvage and the services of Clean Sound Spill Cleanup Cooperative provide an exceptional level of tested experience and sage advice.

The Regional Response Team is not fully activated, though representatives of the Department of Interior are often present and contributing greatly in oversight of bird rescue efforts and work occurring on National Park Service lands. As usual, the presence of the Pacific Strike Team offers a calming influence to all. The experienced and tactful counsel to an already seasoned OSC staff is just the right measure to create an air of trusted confidence that spreads throughout the response organization.

The objective

Virtually the entire Pacific coastline of the state of Washington is intermittently impacted by the oil. Although some areas are not af-

ected at all, areas known as Norwegian Memorial and Yellow Bank are quite heavily contaminated. Cleanup operations focus on the removal of oily debris, the laborious scraping and burning of oil off large rocks and logs, the removal of large oil patties, and the cleaning of oil-contaminated birds.

Due to the remoteness of the beach areas and the often wild sea conditions, containment of the spill prior to its reaching shore is not practical. Because of the time-consuming process to obtain approval for the use of dispersants and the unlikelihood of receiving approval anyway, the OSC does not consider the use of chemical agents as an option. Therefore, pollution response effects are entirely concentrated on beach and bird cleaning.

Manual cleanup of debris and oil patties from affected beaches is the only method utilized for oil removal. Poor access presents a particular challenge to the cleanup contractor. Most equipment and personnel are flown into cleanup sites by helicopter while oiled debris is airlifted to temporary storage sites.

The ecological makeup of the area presents a number of obstacles. The many varieties of shoreline topography present unique and formidable challenges to cleanup crews. Nearly all types of shoreline are impacted by oil—from high-energy rocky steep embankments to low-energy flat sandy beaches. Unfavorable tidal windows repeatedly impede an aggressive cleanup approach on certain beaches. Shoreline in the southern range of the affected area is easier to reach with vehicles, most of the shoreline in the northern area, particularly Olympic National Park, is isolated and extremely rocky or laden with enormous stands of driftwood. Some of the driftwood must be cut up and lifted by helicopter to a disposal site. Special permission from the U.S. National Park Service is required prior to using power tools on the shoreline of the Olympic National Park, and the use of helicopters is strictly monitored by park officials because of nesting bald eagles in the vicinity. It is feared that frequent overflights of nesting areas will disturb and perhaps deter nesting of certain breeding pairs.

The bird rescue center established at Ocean Shores, Washington, is a model of organization under the direction of Alice Berkner, a highly respected bird rehabilitation expert from the International Bird Rescue Research Center. Hired by Sause Bros., Berkner coalesces a large contingent of volunteers from all walks of life into an extremely successful working group. These volunteers, under the watchful eye of the Washington Department of Ecology and bolstered by crews from the Washington Conservation Corps (WCC), not only make a significant contribution to bird rescue and rehabilitation, but also provide invaluable informational feedback on beach impact which is sometimes missed during aerial reconnaissance. Nice job, volunteers!

Significant progress is being made. Most of the oil and oily debris is being removed from affected beaches. The oil is tested and determined not to be a hazardous waste as defined by Washington state law. The oil is classified as a solid waste and disposed of accordingly. Six interim waste storage sites are established with the approval of the Coast Guard and Washington Department of Ecology.

In consultation with the Department of Ecology a plan for disposal is developed and implemented. The general philosophy here is to prioritize disposal in the order of: reuse, recycle, and disposal by burning or landfill. Most of the woody debris is burned at state approved burn sites either along the beaches or on Washington Department of Natural Resources lands. Burning is preapproved by the Olympic Air Pollution Control Authority for the period between January 14 and February 28, 1989. Burning is facilitated by high speed power fans allowing for a more complete, cleaner burn, and the results are quite successful. Nonburnable trash and organic material are collected and lifted by helicopter to the temporary storage site and later taken to a state-approved sanitary landfill at Aberdeen, Washington. Nonburnable inorganic material (563.54 tons) is disposed of in the Aberdeen landfill. As the oil continues to weather and degrade on rocks and cobble, the Coast Guard, the Scientific Support Coordinator, and Washington Department of Ecology officials determine that moving oil cobble from above the high-tide line to within the intertidal zone is an environmentally sound method to clean the beach using the scouring tidal action—primitive, but effective!

By April 21, 1989, almost four months after the spill, most of the impacted beaches along the Washington coast are declared clean by the federal OSC while passive cleaning using anchored oil snare continues at Norwegian Memorial and Yellow Bank until June 22, 1989, at which time the operation comes to an official end—exactly six months after the date of the spill.

It's not over till it's over

The official end. It's always a tough call. At some point, though—and the unfortunate reality is that it's often before the impacted area is returned to its pre-incident state—a determination on the conclusion of the operation must be made. In this case, and in accordance with the National Contingency Plan, officials from the state of Washington and the Coast Guard, the cleanup contractor and responsible party representatives, along with local governments, U.S. Fish and Wildlife Service, U.S. National Park Service, and various tribal nations are consulted. The OSC seeks to obtain input from all interested parties, including a final beach walk whenever practical.

Preliminary walks facilitate the process. Conducted by the Coast Guard, Washington Department of Ecology, and the cleanup contractor, the walks provide an opportunity to determine whether additional cleanup is necessary before a final beach walk is conducted with all involved parties. These are times which demand clear objectivity, stout heart, strong bodies and warm clothing—lots of warm clothing!

The most difficult call to make is that of the Olympic National Park shoreline, a highly valued natural resource. Attempts are made to reclaim the rocky and inaccessible area. However, existing technology does not provide efficient and environmentally safe means to remove *all* oil from a contaminated shoreline leaving it immediately clean. Natural erosion of the shoreline along with the high energy washing effects of wave impact tend to remove oil much more effectively over time—and certainly is less intrusive—than mechanical methods which may result in excessive and irreversible erosion. It is agreed by all that, even though the Olympic National Park shoreline is not restored to its pre-spill condition, Mother Nature will be depended upon to clean the remaining oil with a little help from strategically placed oil snares.

U. S.-Canada interaction

The international aspect of the incident adds yet another facet to the response effort. The Canadian Coast Guard, Environment Canada, and the British Columbia Provincial Emergency Program are all part of a 24-hour spill reporting system in British Columbia. First word of the spill is received through this system. On Friday morning, December 23, at 9:13 a.m., authorities from the Washington State Department of Emergency Management contact the British Columbia Provincial Emergency Program about the extent of the *Nestucca* spill. Immediately thereafter, they notify Environment Canada's Environmental Emergency group. This group then notifies all the other pertinent government agencies through their notification system, including the Canadian Coast Guard (CCG).

All initial reports indicate that the oil would move offshore. However, it is realized that a problem could arise if the winds would shift to the northwest, at which time some oil could reach the west side of Vancouver Island, Canada. Throughout the response, USCG and Washington State keep in constant contact with their Canadian counterparts.

On the evening of December 23, Washington Emergency Management authorities notify the British Columbia Provincial Emergency Program that the oil should not go north of a line at the mid-Washington State coast. Between December 25 and 30, there are numerous communications between USCG and CCG sharing information concerning the aerial surveillance that is being conducted by USCG and NOAA. At this time, it is still believed that there will be no impact to the beaches along the Canadian coast.

It is not until *Nestucca* is properly gauged, upon reaching Astoria, Oregon, that the loss of over 200,000 gallons of oil is discovered. This is well in excess of the amount of oil used in NOAA's original projection on fate of the oil and explains the oil's appearance much further north than originally expected.

On December 31, CCG receives a report about oil in the water and some dead oiled birds on Vancouver Island. The CCG then contacts the USCG, who in turn reports that there is additional oil on the beaches of Cape Flattery, Washington, not far from the Canadian border, and more oil in the water north of the Cape.

On January 1, 1989, Washington DOE offers to survey the impacted areas along the Canadian coast and to take a sample of the oil. The CCG agrees with this proposal and also decides to conduct their own

survey. Based on these surveys, the type of beach terrain impacted and the wave action, the CCG decides that no cleanup is necessary at this time. Over the next few days, more oil and dead seabirds continue to wash ashore and a major cleanup effort commences in Canada.

On January 4, 1989, the CANUSPAC is invoked at the request of the Canadian government. This plan provides for coordinated and integrated responses to pollution incidents between Canada and the United States when an oil spill affects both countries.

On January 5, results from the samples taken by Washington Department of Ecology arrive showing that the oil on the Canadian beaches did come from *Nestucca*. An hour later, Sause Bros. informs the Canadian government that a Canadian contractor has been hired to clean up the oil.

The count

- The *Nestucca*, carrying approximately 3 million gallons of Bunker C, lost an estimated 231,000 gallons.
- More than 3,000 oiled birds, primarily open-ocean diving birds such as murrelets, grebes, and scoters, were collected and treated at the bird rehabilitation center in Ocean Shores, Washington. 2,000 succumbed; 1,000 birds were released.
- In addition to the live birds collected, more than 6,000 dead birds were retrieved from the shoreline.
- A large bald eagle community, more than 100 sea otters and a significant fish and shellfish population were at risk. Washington's Marine Resource Damage Assessment Team determined these populations to be unaffected.
- More than 585 tons of oiled waste was landfilled.
- Approximately 45,000 cubic yards of oiled logs were burned.
- Approximately 90 cubic yards of oiled pom poms/oil snare were burned with hog fuel at a local pulp mill.
- Over 7,000 Washington Conservation Corps staff hours were devoted to bird cleaning.

So . . . What did we learn?

• More than anything else, the *Nestucca* incident confirmed the importance of oil pollution prevention and preparedness. Successes experienced during this operation can be directly attributed to the team-building efforts as a normal course of everyday business among the response community. Since 1985, the Coast Guard OSC's staff had orchestrated an ongoing program of training and planning with local governments. Response drills had been conducted to test plans, and the greatest benefits of all were the trust and camaraderie already in place when the "annual big one" hit.

With each agency providing their respective OSC, it is interesting to note that, although it may have been natural to ask "Who's in charge here?" this question never needed to be asked. Indeed, through the trust established by prior team building—though it does not, and will not ever, appear in state or federal regulations—the OSC was in fact an entity, or team, comprised of all of the professionals assembled to make this problem go away.

The tenor of the response organization could be likened to the sense of employee ownership nurtured by corporate management. The *team* was encouraged, indeed empowered, by the authority flowing from the OSC. The *team*, in turn, put that empowerment to work for the OSC, identifying and accomplishing tasks in a most systematic and satisfying way. The success that naturally evolves from this approach is not new to business, but only recently has it begun to become popular on a global scale by government agencies. We are hearing it now more formally described as "total quality management."

The team strictly adhered to a systematic daily work schedule and nightly debriefs to work out problems or impediments to progress for the next day's assault. After these nightly sessions, pollution reports would be completed, updates would be passed to the Canadians and local county governments, and special problem solving groups would gather to tackle issues and formulate solutions. Ideas! Creativity! Commitment! More ideas! These represent the core of the total quality process. The Scientific Support Coordinator was generally at the center of these groups. Memoranda of understanding were crafted covering such concerns as disposal and how beaches were to be rendered clean.

• In this instance, *Nestucca* demonstrated the critical importance of early detection and accurate assessment. The oil was difficult to detect on the water, and early predictions as to the fate of the oil were later proven to be incorrect, hindering an effective early response operation. Containment and recovery of oil at sea are typical activities for most offshore spill response operations, but in this case, no such effort was made because oil was not observed in sufficient quantities to make recovery practical, particularly with the limited capability of oil recovery equipment in rough seas. Therefore, vigorous air reconnaissance should be of the highest priority in the initial phase of response operations.

• *Nestucca* emphasized the value of utilizing experienced liaison personnel to maintain transitional continuity when a large spill impacts more than one area. For future spills, when there is the possibility that the oil may impact another OSC's area of responsibility, it is essential that liaison be established immediately so as to ensure an adequate flow of information between the two OSCs and to effect a smooth handoff of responsibilities if that becomes necessary.

And so another odyssey along the shores of the Pacific Northwest comes to an end. Our concerns were to be focused and forged into action that would launch the environmental response community onto another plane of legislation, planning, and preparedness. Not since the days of the *Argo Merchant* have we been drawn forward with such force. *Nestucca* was a stepping stone to progressive change within the Pacific Northwest. The states of Washington and Oregon, as well as British Columbia, Canada, joined together to form an Oil Spill Task Force. Their mandate was to investigate methods of preventing spills, document and assess mechanisms for dealing with compensation claims, and develop contingency plans for preventing and responding to future mishaps. Their hopes were the adoption of a comprehensive set of recommendations to minimize the occurrence of major spills and assure effective response in the face of the next catastrophe. Much of the notoriety, public concern, and temporary indignation was soon to be eclipsed by the enormous dark hull of a fateful ship that was soon to ply the waters of Prince William Sound. One day after the first meeting of the task force, the *Exxon Valdez* the *Bligh Reef* became household words.

The rest of the story

Which brings us back to our three OSCs. As our story has shown, the good guys did win this one; the angry gods were appeased; the oily beast contained.

But what about next year? For as surely as the sun shines, December will once again be upon us, and with it, that ominous threat. Dues must be paid. No one knows this better than our three OSCs who are prepared to do battle once again, this time cloaked in the mighty armor of the Oil Pollution Act of 1990. Will they succeed? Will the lessons learned during *Nestucca* fortify and streamline their efforts? Will Christmas, once again, be overshadowed by the darkness of the deep? Will there be film at eleven?

Stay tuned for our next episode!