
**Drill Monitoring Contractor
Annual Report
2003**

**Prepared for the
Prince William Sound
Regional Citizens' Advisory Council**

by

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2003 REPORTS INDEX

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3/6		Transrec (postponed weather)
3/12		Cordova NS (dna/weather)
3/13		Cordova NS (dna/weather)
3/14		Transrec (postponed weather)
3/20	02	Tonsina/Nanuq Tow exercise
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10/23	19	Tesoro Tabletop
11/4	20	Chenega exclusion
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OTHER REPORTS		
3/21		Review of Coast Guard tow exercise tracking
4/10		Review of tow exercise weather conditions
4/24		Review of major drill dispersant applications
Summer		Participated in planning team for both ADEC surprise drills
12/2		Review of terminal drill lessons learned
Fall		Member of nearshore drill evaluation work group.

OTHER ACTIVITIES:

CONTINGENCY PLAN REVIEW: Drill monitor was an active participating member of the project team. This involved attending weekly meetings, providing analysis and background for various escort and response issues and research into several aspects of the plan and resultant conditions of approval.

DRILL AND EXERCISE OBJECTIVES DEVELOPMENT: In 2002 the Alaska Department of Environmental Conservation in conjunction with industry and RCAC began the process of developing standardized objectives to facilitate evaluation of industry escort and response training, exercises and drills. By year's end, the group had developed goals for a formalized list of standard objectives for open water response and had begun developing objectives for nearshore operations. RCAC's drill monitor was an active member of this working group.

READINESS: Drill monitor maintains a state of readiness prepared to respond to an incident in Prince William Sound on a 24-hour basis and at times has assumed periodic formalized "on-call" duty in Valdez. This means accepting an on call status 24 hours a day in case of an oil spill. It also involves maintaining monitoring equipment for communications and documenting events, keeping batteries charged, and all stored and ready to go on a moment's notice.

MEETINGS: The drill monitor regularly attends Oil Spill Prevention and Response Committee meetings, occasionally Port Operations and Vessel Traffic Committee meetings and council meetings as required.

MAJOR DEVELOPMENTS

SURPRISE DRILLS: Perhaps the most significant events of 2003 were two surprise drills called by the Alaska Department of Environmental Conservation. Both were standard Transrec barge deployments, the operation most commonly exercised over the history of SERVS. In the first, June 4, evaluators found a number of deficiencies, the most telling being it took more than eight hours to get one Transrec task force formed and operating. (See Report number ADEC 6.4.03 #8) Some deficiencies were found in just about every aspect of the drill including Transrec operation, barge loading, command and control, communications, formations and decontamination. A comparison with a similar drill called by ADEC in 1998 found many of the same comments were made during the earlier one.

Following the June 4 drill, ADEC determined another would be called to evaluate whether SERVS had addressed the deficiencies and was indeed capable of a timely oil spill response with open water equipment. In the subsequent three months, SERVS entered into a period of intense training in open water techniques. A number of on-water, and tabletop exercises were performed including an internal surprise callout of all four Transrec barges. Neither RCAC or ADEC was informed of these exercises and they were not observed independently.

ADEC called the second surprise drill September 30. Response to the second drill proved to be for the most part up to standards, with initial deployment taking a little less than two hours and, in general, operations proceeding according to standard practices and following contingency plan requirements. (See report number SERVS 9.30.03 #16) While some criticisms remained, overall the drill was considered a success and a tremendous improvement over the June 4 drill.

Despite the success of the second drill, concerns linger and need to be monitored carefully. It has to be understood that the drills addressed the most common tactic in the SERVS repertoire, one that is the basis for immediate response and the most practiced of all SERVS operations. Transrec task forces have been exercised fairly constantly and regularly since the barges first arrived in Prince William Sound and were outfitted with the Transrec skimmers and other equipment. Yet, it took three months of intense training for SERVS to work up to an adequate response. RCAC and others have warned of the danger of complacency and this may be a prime example of it. The vigil needs to be maintained to assure that once SERVS has reached this point of response capability, it is maintained through consistent training and exercising.

TANKER ASSISTANCE EXERCISES: SERVS and the TAPS shippers performed six tanker assistance exercises in 2003. The agreed upon number had been four, but only two were done the previous year so two were added to the current year's schedule. Over all the exercises demonstrated the superiority of the Valdez tug fleet with its five large new technology tugs. The enhanced tractor tugs with Voith Schneider cycloidal propulsion and the three prevention/response tugs with azimuthing drives continue to demonstrate probably the best ship handling ability of any tugs in the world, especially now as crews have become accustomed to working with them and using their unique abilities.

Two issues regarding the escort system arose during the year. The first involves the new Millennium class ships operated by Polar Tankers. These ships have independent, redundant steering and propulsion systems making them very maneuverable and provide a safety factor as the isolated systems can operate independent of each other should one break down. In one exercise with the Polar Endeavour Sept. 5, two failed rudder exercises were run with the ship making 10 knots. (See report SERVS Escort 9.5.03 #14). In the first, the ship corrected its own turn, shutting down one system and making the save with the other. In the second, the same failure was simulated with the rescue being made by an enhanced tractor tug. A comparison of the two exercises showed the ship actually saved itself faster than the tug did. Currently Polar operates three such ships in the Valdez trade with orders for more and BP floated the first of its own dual-powered, diesel-electric ships this fall. As these ships join the trade, shippers may look to modifications of the escort system under the claim that the dual systems constitute what amounts to an escort tug. It is a potential upcoming issue which RCAC might be wise to examine and prepare a policy.

The second issue that arose during the year was exercises in rough weather. At meetings early in the year that included SERVS, shippers, ADEC, Coast Guard and RCAC, representatives discussed rougher weather exercises, to get a picture of save capability in Hinchinbrook Entrance. Most exercises seem to fall during relatively calm weather. While it was agreed safety considerations prevent an exercise at closure conditions, scheduling one when winds were expected in excess of 20 knots was considered both possible and a goal for the year. The group agreed to watch weather, particularly around the equinox when higher winds can be expected, and attempt to perform at least one heavier weather exercise. However, though conditions did arise that would have allowed such an exercise, none was scheduled or performed. A ship and tug did do one in what was considered heavier

weather, however this was called by the ship captain himself and no observers were invited to attend.

TUG CAPTAIN: There is always room for improvement in any system. Over the years SERVS and other personnel have been observed trying new techniques to improve the overall system. Though some fail, the idea that new things are being tried has always been a laudable effort on the part of industry. During 2003 one individual was observed using innovative techniques that should be applauded. Dave Sweeney, captain of the PRT Alert, came north with the tug and has been captain since that time. Two maneuvers it appeared he developed were used in exercises this year.

The first involved a tanker assistance exercise. The Alert was called to make a save at 10 knots with a failed rudder stuck at 15 degrees. The PRT cannot use the indirect mode as the ETTs can. What Captain Sweeney did, was, as the ship turned, he maintained the original course with the tug. This created a tow-line angle of about 20 degrees to the ship putting the tug in perfect position to make the save once the ship called for assistance. With the angle already achieved, once the call came, Captain Sweeney could apply transverse arrest at the higher speeds, then turn to full reverse as the ship slowed, effecting the save in times comparable to the ETTs. (See report SERVS 9.4.03 Escort #13)

The second observation was during a Transrec exercise. In most such exercises, Vikoma Ocean Boom is deployed off the barge to fishing vessels, the tug pulls the barge away, then the fishing vessels form the boom into a U configuration and tow it into position behind the barge. In some conditions this has taken a considerable amount of time. During this exercise, after the boom had been released from the barge, Captain Sweeney directed the fishing vessels to form their U in the desired location. Then, using the exceptional barge handling capabilities of the PRT, he maneuvered the barge into position in the boom, saving valuable time and perhaps wear and tear on equipment as well.

DECONTAMINATION: Through the years, decontamination aboard barges and vessels has largely been ignored or simulated during exercises. In the past year, it was taken more seriously, and decontamination was made a larger and more active portion of the efforts. The surprise Transrec drills led to serious consideration and numerous changes in the decontamination procedures aboard those barges with a considerable amount of new equipment added.

EXERCISE NOTIFICATIONS: During 2003 RCAC was notified of approximately 25 drills and exercises involving SERVS. However, the organization claims to have

performed many more than that. Of particular note was a number of drills and exercises with Transrec barges held between the two surprise drills June 4 and Sept. 30 and the tanker assistance exercise in windy weather in which no independent observers were involved. In order to perform its mandate under OPA 90 and the contract with Alyeska, RCAC needs to be involved in as many exercises as possible and not be excluded from doing its independent observation. In instituting a series of what it called “shakedowns” a couple of years ago, SERVS management indicated the desire was to try new things and not be judged on them. The obvious counter to that argument is that during the first few years of SERVS’ and RCAC’s existence, almost every exercise was a “shakedown” and trying new things. Making note of that fact in reports allowed SERVS to continue to experiment and refine the system. In order to fairly evaluate the capability of the system and assure citizens of the region that it is operable, exercises must be observed and SERVS should inform RCAC and ADEC of such exercises and allow those entities to make the decision whether to observe or not.

FUTURE DRILLS: One consistent issue over the years has been the number of surprise drills called by the ADEC. Unannounced drills give the best indication of response readiness. Two large surprise drills were called in 2003 and according to ADEC officials more will occur in the future. In a talk to the RCAC council at the December meeting, ADEC Commissioner Ernesta Ballard said the change of contingency plan review from a 3 to a 5-year cycle would allow personnel to plan and call more drills to test industry readiness. RCAC can look forward to a more adequate measure of preparedness in the future if this schedule is improved as she said.

ONGOING CONCERNS

As part of the 1998 contingency plan review, the contractor was asked to compile a list of lessons learned over the years since the program began in 1992. That list is included again in the annual report with updates for those areas addressed during the year.

WASTE STREAM MANAGEMENT: Disposal of recovered oil is an issue that has been discussed during several drills and exercises over the years, however without resolution. The most likely solution appears to be pumping secondary storage barges into a tanker of opportunity, however how to dispose of that oil has not been addressed to any extent. Apparently the recovered liquids cannot be put through the terminal's ballast water treatment plant without some measure of filtering and treatment beforehand. Putting the waste in a tanker of opportunity would take that ship out of service for a considerable period of time. The most likely disposal of a tanker full of recovered liquids is at the one R-2 refinery in Freeport, Texas which can handle highly emulsified oil. This is an issue that could be addressed and planned for prior to a spill. Solid waste disposal also has remained a question mark. This issue was discussed at length during VMT drills in 2003 and a plan was assigned as a lessons learned action item.

MOVING A DAMAGED TANKER: Early drills had the ship taken to Outside Bay after an incident in the sound. This location has been questioned and no specific location to take a disabled tanker has been settled. This should be planned for ahead of time.

UPDATE: Discussions during drill preparations have included suggestions that the best place to bring a stricken ship is back to the terminal, however it was decided local authorities probably would not allow it.

GRAHAM REC SKIMMER: Even after its re-engineering in 1994/95 the skimmer's capability remains questionable, though use of it is mandated for 12 of the first 24 hours to meet the 72-hour/300,000 barrel planning standard. By definition it is to be used in a static situation in thick oil, yet it is part of a dynamic skimming operation, namely the Transrec barges. Without any testing ADEC assigned it an efficiency rating of 50%, also a questionable number considering its efficiency is based on the relative amounts of oil and water it pumps. That rating and to meet planning standard calculations was based on a pump capacity of 2,100 bph. The skimmers actually have Framo TK-6 pumps which have a capacity over 3,000 bph. Since the operator has to stand as far as 200 feet away, the ability to keep the

weir at the oil/water interface is questionable. Also, the Graham Rec has a shorter discharge hose than the Transrecs so that when it has been deployed, it does not reach the containment boom, thus limiting its ability to work in the thickest oil concentrations. Bringing the boom closer to the barge to make the Graham Rec more effective then limits the Transrec efficiencies and the skimmers most likely would tend to rob oil from each other. As late as 2003 the skimmer had not been deployed in oil, so its actual efficiency remains a question mark. It has been tested in rough water and while it maintained its floating characteristics, waves did wash over it. The VSP tractor tugs have been used for barge control in Transrec formations. Observations indicated the tugs could hold the barge in almost static position, increasing the efficiency of the Graham Rec skimmer along with the boom and Transrec skimmers.

VALDEZ DUCK FLATS: Several exercises over the years have shown the planned boom configurations put the boom perpendicular to tidal currents which leads to entrainment under the boom and allows oil into the Duck Flats area. Studies of flats currents have been planned but not carried out and the boom plan has not been adjusted. Also, in winter operations, ice floats off the flats and can damage a boom or sink it. RCAC's drill monitor, an ADEC representative and SERVS personnel tested currents during a Duck Flats deployment March 17, 1999. At that particular time, currents were found to be of less velocity than could be expected to cause entrainment and from a direction making an effective angle to the boom. It was pointed out at the time, that currents needed to be studied over a variety of tide ranges in order to develop a full picture of tide direction and strength on the flats. During 2002, two exercises were performed with deployments at the Duck Flats. One was a "shakedown" to which RCAC was not invited. The second was an unannounced drill called by ADEC. Neither exercise showed an attempt to try new boom configurations that might prove more effective. However, it was noted in that unannounced drill that personnel remained on scene, tending the boom and adjusting positioning as currents demanded.

2003 Update: PROJECT Z404: SERVS has requested \$1.1 million for a project to upgrade hatchery and Duck Flats protection. Part of an exercise June 12 was to capture items that would be included in that project request. Among considerations are new permanent anchors along the west side of the Container Dock and an evaluation of the east side boom with the idea of moving the shore

side anchor point eastward to allow a better angle of boom to prevailing current in the area.

PORT VALDEZ CURRENTS: Experience in exercises and actual spills has shown currents in the port are not always predictable according to what would be the logical flow of ebb and flood tides. This has created difficulties with booms at the hatchery, Duck Flats, terminal and during various shoreline deployments throughout the port. Also, current information for Port Valdez in the ATOM model is marginal at best. Since the port is accepted as the most likely location for a spill, studies of currents need to be made and this should include local knowledge from fishermen with experience in the port.

SOLOMON GULCH HATCHERY PROTECTION: It was noted during the Eastern Lion spill in May 1994 that oil can move from Berth 1 to the hatchery in about an hour on certain tides and currents. Several improvements have been made since then in the hatchery protection program, but the deployment still takes more than four hours. It was recommended that a plan be developed for interim deflection away from the hatchery while the booms are being deployed. See Duck Flats comment above.

In 2002 SERVS attempted a deployment on the west side of the hatchery in March, using CSI boom rather than the slower deploying Shore Guardian See Report 752 Nearshore 2002 05. Though tide and winds interfered with the deployment, the boom was out, in place and could have been deflecting oil away from the net pens in just about an hour, compared with four and a half or more to complete the formations with Shore Guardian. In addition, during two exercises involving the terminal, personnel addressed hatchery protection early and sent mitigating equipment between the terminal and the hatchery.

BURNING: It has been shown in tests that 3% by weight of burned oil sinks to the bottom in a consistency of peanut brittle. This aspect is not mentioned in considerations before the decisions allowing burning.

In 2002, SERVS personnel agreed there was a taffy-like substance after a burn, but insisted this could be recovered during the first half hour or so. It was agreed to research this aspect of burning, but to date no report has been issued.

COMMUNICATIONS: There are several communications issues beginning with the fact that in a major response there won't be enough VHF frequencies to go around.

Some specifics:

Use of frequencies: In a nearshore exercise April 20, 1998 in which two strike teams were deployed, four VHF channels were used for various parts of the operation. In a real response with as many as 45 strike teams in operation this would quickly clog VHF communications.

Boom deployment: It has been observed in several boom deployments involving fishing vessels, particularly from the Barge 500-2, that there is not consistent communication with the deploying vessel. At times the fishing vessel has been observed maintaining strain on tow lines while barge deck crew was working on the boom reel, creating the potential for a serious accident. A watch needs to be maintained to monitor the vessel and the deployment crew constantly. Also, voice commands and hand signals should be standardized.

Transrec formations: Often the tug captain controlling the barge holds the command. However this operator cannot see the boom apex or the position of the skimmers within the boom. A watch should be maintained and commands given from a position at the stern of the barge in order to ensure the proper positioning of boom and skimmers.

During discussions among industry, ADEC and RCAC to develop objectives for evaluating open-water exercises, communications were addressed with specific goals identified and to be included as objectives and evaluation criteria in future exercises. OFFSHORE RESPONSE: Only one exercise has been held to demonstrate offshore capabilities outside Prince William Sound. That was August 8, 1996. It happened on a very calm day near Seal Rocks and as a result did not give any realistic picture of offshore capabilities. Among questions raised from that exercise were:

1. The choice of Vikoma Ocean Boom and whether it was adequate for offshore work considering North Sea operators have abandoned it in favor of the RO 3500 which is larger, stronger and takes less tending.
2. Derated capacities of barges to meet offshore manning requirements.
3. Effectiveness of electronic communications equipment to reach the operating units.

SERVS took delivery of two NOFI 1000 boom systems in 1998 for use with the Transrec barges. These appeared to be more suitable booms for offshore work and held out other possibilities as well, including helping with barge control. These booms were being refined before adding them to the SERVS inventory. To date these have not been observed in use.

In 2001 SERVS did one mobilization drill sending a barge from Port Valdez to Hinchinbrook Entrance, testing response time.

TECHNIQUES: Much of the strategy and technique appears to be rigid according to the contingency plan. World wide, techniques and strategies differ and training, particularly for supervisory personnel should include instruction in techniques employed by other OSROs. For example, during an exercise in Chenega during 1997, a standard technique used by Clean Coastal Waters was attempted and appeared to work with fishing vessels and the landing craft Krystal Sea. Considering the constantly fluid nature of an oil spill response, supervisors should have as many strategies and techniques as possible available to them. In 2002 SERVS management considered this suggestion and said they would look into developing a handbook of alternative techniques. Through 2003 it did not appear this was accomplished.

MATCHING FISHING VESSELS AND EQUIPMENT: Almost since nearshore operations began, fishing vessel operators have suggested SERVS match equipment with individual vessel hydraulic systems rather than place a power pack on the deck of each vessel. To date there is no evidence this has been accomplished. A large part of the difficulty with this is most SERVS equipment demands a specific type of hydraulic oil and there is no guarantee fishermen would be using the same type short of SERVS purchasing the oil for them.

EXCLUSION BOOMING: The contingency plan shows exclusion booming of a bay with the boom straight across the mouth or with two layers of boom. As tidal currents generally move in and out parallel to the lay of the bay, this puts the boom directly perpendicular to the flow and, as experience in exercises has shown, causes entrainment, allowing oil into a bay that is being protected. Diversions at the points, constantly tended, provide better protection. As the development of geographic response strategies continued into 2002, bay-crossing exclusion booming appeared to be the method of choice for protecting bays. A GRS exercise in July used exclusion deployments across both ends of a channel behind an island near Montague Island which showed obvious difficulty maintaining exclusion and appeared to allow considerable entrainment. The same type of booming was observed during GRS deployments in 2003.

BOOM TOWING DIRECTION: Several reports beginning in 1993 mentioned vessels towing boom into the wind. This causes splashover and entrainment. Several times it had been suggested boom be towed downwind, but this has not been

demonstrated to any degree in subsequent exercises. Tugs have more difficulty controlling barges downwind than they do towing upwind.

This was observed in a 2002 exercise and as expected, the new VSP and PR tugs were able to maintain a steady, almost static barge position no matter what the current. However, fishing vessels towing the boom downwind experienced difficulty maintaining the formation and tended to overtake the barge because of higher towing speeds necessary to maintain the shape of the boom.

ENTRAPMENT MODULE DEFLECTION BOOMS: Booms directing floating oil into a beach area for skimming over the past several exercises have been difficult to maintain as they tend to belly, collect oil and then entrain allowing oil to pass.

These booms generally are anchored at the shoreline and offshore. Dynamic deflection with two vessels holding the boom has been shown to maintain shape and better serve to keep oil away from sensitive areas.

This was evidenced in GRS deployments in 2003 and in an exercise at Chenega in early December.

SHORELINE PROTECTION: Though it is understood SERVS maintains its contract for shoreline protection, no exercises have been observed with this contractor since 1999.

2003 Drill Monitor Budget

Fiscal Year 2004 Budget: Professional services \$61,200
Expenses \$3,800

2003 DRILL MONITORING BUDGET TRACKING

CATEGORY	PROF	MONITORIN	TOTALS
	SERVICES	G EXPENSES	
JANUARY	\$4,380.00	\$0.00	\$4,380.00
FEBRUARY	\$4,380.00	\$0.00	\$4,380.00
MARCH	\$4,380.00	\$0.00	\$4,380.00
APRIL	\$4,380.00	\$0.00	\$4,380.00
MAY	\$4,380.00	\$0.00	\$4,380.00
JUNE	\$4,380.00	\$29.52	\$4,409.52
JULY	\$5,100.00	\$0.00	\$5,100.00
AUGUST	\$5,100.00	\$1.80	\$5,101.80
SEPTEMBER	\$5,100.00	\$15.12	\$5,115.12
OCTOBER	\$5,100.00	\$446.95	\$5,546.95
NOVEMBER	\$5,100.00	\$0.00	\$5,100.00
DECEMBER	\$5,100.00	\$424.45	\$5,100.00
TOTALS	\$56,880.00	\$917.84	\$57,373.39

FOR THE COMING YEAR

The new year could be a pivotal one for spill prevention and response in Prince William Sound. Several activities begun in 2003 could lead to changes in the system and in the way its abilities are verified. To begin with, if the words of the ADEC commissioner were to be taken seriously, more surprise drills can be expected. That process was begun in 2003 and should continue into the coming year. The two major surprise drills called in the TAPS system are indicative of that as was a series of nontank vessel tabletops called in late fall.

The two surprise drills led to some changes at SERVS as well, resulting in several persons assuming new roles in the organization. As the new personnel move into their positions, activities will be monitored to assure that the system's abilities remain at high levels. Coupled with the changes at SERVS is the system-wide reorganization proposed by Alyeska in 2003 for the entire pipeline. While most of these changes are to occur up country from Valdez and out of RCAC's area of concern, there could be effects moving down into the terminal and ocean trade.

In 2002 and 2003 a working group including industry, ADEC, the Coast Guard and RCAC developed a set of evaluation criteria for open water exercises. Those criteria are now in use for exercises. That group reassembled in late 2003 to begin similar work in the area of nearshore response. That work is scheduled to continue into 2004 and should be completed by mid year.

There was talk in 2003 of doing tanker control exercises at greater than calm conditions to gather information on the abilities of the tugs to make rescues at closure conditions in Hinchinbrook Entrance. These exercises were not accomplished and a push can be expected to hold them in 2004.

Also planned in 2004 is a major NPREP drill conducted by the U.S. Coast Guard and Conoco Phillips/Polar Tankers, scheduled for August 2-6.

Perhaps most importantly, as time and distance from the Exxon Valdez oil spill increase, along with assurances of the improved escort system, RCAC partially through the drill monitoring program, needs to maintain constant vigilance to prevent the onset of complacency, and continually provide assurance to the residents of Prince William Sound and the EVOS region that an effective escort system exists and that a suitable, timely response to an oil spill can be expected.

Respectfully submitted,

Tim Jones

January 6, 2004