

Attachment 4**VLCC METULA GROUNDING AND REFLOATING REPORT****EXECUTIVE SUMMARY**

At 10:20 P.M. on 9 August 1974, the VLCC METULA, transiting westbound through the Strait of Magellan and laden with 194,000 tons of light Arabian crude oil, ran aground on Satellite Bank, at the west end of the First Narrows. Grounding at almost her full speed of 14.5 knots, METULA came to a stop in about 260 feet, opening up five of her forward-most compartments, including two cargo tanks, to the sea, initially losing about 6,000 tons of oil, which amount increased with time due to the action of tides and current.

At first METULA held fast on her grounding heading of 235° True, but on the afternoon of 11 August, her stern swung to starboard and the after portion of the hull grounded, holing the engine room, which was flooded in about an hour. METULA was then stranded starboard side to a steep rocky ledge on a heading of about 185° True, and she held this position thereafter despite cross currents of up to eight knots.

Shell Tankers B.V., Rotterdam, operators of METULA, made salvage arrangements on a daily rate basis with Smit International Ocean Towage and Salvage, Rotterdam. The salvage tug ZWARTE ZEE departed Montevideo for the scene. A salvage team headed by Smit's senior salvage inspector, CAPT COLTHOFF, designated Salvage Master, was dispatched by air to Punta Arenas, along with some fourteen tons of equipment. CAPT JONGENEEL, Shell Tankers' Marine Superintendent, went along to manage the ship operator's interest in the salvage effort, as did ANDREW MARSHALL, London Salvage surveyor for the hull underwriters.

Meanwhile, Shell arranged for two tankers to proceed to the scene -- the Argentine tanker HARVELLA of 19,000 DWT, for initial lightening, and the Norwegian tanker BERGELAND of 96,000 DWT, for the HARVELLA to discharge into.

The ZWARTE ZEE arrived in Punta Arenas on 15 August and picked up the men and equipment that had been flown in. After a delay due to weather, she secured alongside METULA on 17 August. At that time damage was assessed, calculations were started, and plans for refloating began to be formulated. Meanwhile, two more salvage tugs -- the SMIT SALVOR and the NORTH SEA -- were dispatched to the scene from the Panama area.

The Coast Guard first became aware of the incident on 13 August through a message from the United States Delegation to the Law of the Sea Conference in Caracas. Two days later it was derided that a Coast Guard observer should go to Chile to learn as much as possible about the incident, in view of prospective supertanker traffic into and near the United States.

The Coast Guard observer, CDR James A. ATKINSON, arrived in Punta Arenas on 19 August, was briefed by the Chilean on-scene commander, RADM ALLEN, conferred with Shell and insurance representatives, and the next day visited METULA. There he was apprised of METULA's condition, the severe complexities of the situation, and the salvage plans. He described to CAPT COLTHOFF the U.S. National Strike Force and ADAPTS pumping systems and told him that Chile might obtain Coast Guard assistance through a government to government request. The following day CAPT COLTHOFF sent a request to the Chilean government, which apparently contributed to Chile's decision to request U.S. assistance *on a cost reimbursable basis.*

Progressive damage occurred on the subsequent spring tides with four more cargo tanks opening to the sea on 19 August, a ballast tank and bunker tank on 4 September. On 24 September another cargo tank began to leak.

The tankers arrived on scene, but, were delayed awaiting the Yokohama fenders, which, due to the difficulty in finding an aircraft that could transport them, did not arrive until 26 August.

The U.S. Strike Force contingent and three ADAPTS systems arrived on 27 August. One of the systems and six men went out to METULA in time for the first offloading into HARVELLA on 28 August. After the salvor's plans changed, the other two systems were ordered out and all were thereafter fully integrated into the pumping off of cargo, the injection of compensating ballast, and the deballasting during refloating.

After four offloading by HARVELLA, totalling about 50,000 tons, BERGELAND) departed the scene to deliver this cargo to Quintero Bay, Chile, (its original destination) with orders to return for the remainder of METULA's cargo.

Refloating was planned for 21 September, but was delayed by weather until the 24th. On that date an effort was made, with a combination of deballasting intact tanks and "blowing down" open tanks with air. This attempt was not successful. So on the next tide more ballast was pumped out and more air was applied, this time with success. METULA came afloat at 0235 on 25 September and was moved to anchor a few miles west of her stranded position. Here adjustments were made in list and trim, and cargo was transferred to reduce the chance of pollution. Severe winds occurred from 27 to 30 September with velocities from 90 to 100 knots. After this moderated, on 1 October, BERGELAND) went alongside METULA and offloading continued, broken by periods of high winds. Offloading was completed on 10 October. The total amount of cargo saved was about 140,500 tons; about 2,000 tons remained in the ship, mostly in clingage, and about 51,500 tons of crude oil and some Bunker c was lost into the waters of the Strait.

Pollution surveillance by air was carried on almost every day. appearance of the polluted water and beaches from the air varied from day to day, the marked differences apparently stemming from the effects of wind and tide. The heaviest water pollution observed was on 20 August after the largest cargo release, when slicks covered about 1,000 square miles. At most other times the oil was penned against the beaches by the wind, reducing drastically the water surface coverage. A beach survey by Dr. Roy HANN of Texas A & M University, who had visited the scene on behalf of the U.S. Coast Guard, revealed massive beach deposits of oil-water emulsion, some of which was well above the highest water level, apparently carried there by the gale force winds from the breaker tops during highest tides. His rough measurements showed that most of the oil that had not either evaporated or dissolved had apparently gone ashore. At first this was confined to a strip of beach on Tierra del Fuego, on the southern shores of eastern Bahia Felipe, and the First Narrows, but it later spread farther to east and west; some ended up on the north shore eastward of Cabo Posesion, and patches were sighted west of the Second Narrows. There was an appreciable bird kill, but many migrating penguins passed the polluted area and reached their nesting islands in the Strait without damage.

The ADAPTS equipment, which was developed by the Coast Guard after a study of the TORREY CANYON disaster, gave excellent performance, fully vindicating the efforts expended in its development. The NSF contingent operating that equipment, self-supporting under primitive living and severe climatic conditions, carried out their duties with perserverence, dedication and skill confirming the best traditions of the Service and in keeping with the Strike Force concept. In so doing they played a most important part in restricting the oil pollution to a minimum, before, during and after the refloating operation.