



Oil spill accident in the Kerch Strait • November 2007



**Commission for the Protection
of the Black Sea Against Pollution**

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in November 2007**



ISBN 978-1-56592-479-6



9 781565 924796

**Moscow
2011**

UA-459

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For bibliographic purposes this document shall be cited as:

**Oil spill accident in the Kerch Strait in November 2007.
Edited by Alexander Korshenko, Yuriy Ilyin, Violeta Velikova.
Black Sea Commission Publications 2011, Moscow, Nauka, 288 p.**

This book has been prepared with the financial support of the European Commission MONIN-FO project (Environmental Monitoring of the Black Sea Basin: Monitoring and Information Systems for Reducing Oil Pollution), as to enable coastal states to better address operational/accidental/illegal oil pollution aspects.

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Published by

Printing House «Nauka»

121099 Moscow, Shubinsky Lane 6

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ISBN 978-5-87317-832-2

UA-459

INTRODUCTION

On 10 and 11 November 2007 a strong storm hit the Kerch Strait located between Ukraine in the West and Russia in the East (Fig.1), and linking the Sea of Azov with the Black Sea. Extremely severe conditions totaling 9 hours lasted from 5:00 AM till 2:00 PM on 11 November. Winds exceeding 30 m/sec produced the over 4 meter-high waves in the waters where the depth varied from 7 to 12 meters only.

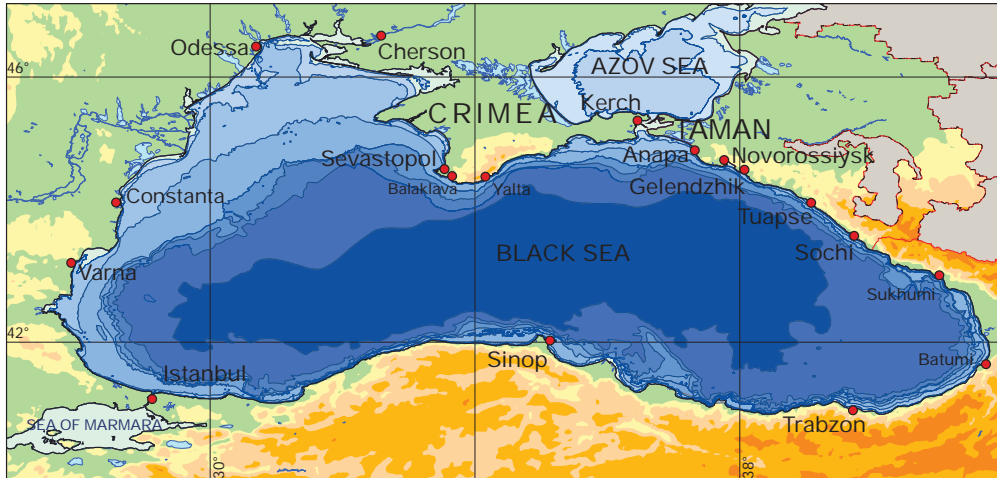


Fig. 1. The Black Sea and main ports

During the storm, 167 boats were on the strait and in its vicinity, while most of them were anchored. No doubt, that the weather conditions experienced by the region at that moment were most unusual and largely unexpected, and, on top of it, a number of vessels had ignored Ukrainian and Russian strong weather warnings and found themselves in the extreme and dangerous sea conditions. Besides, the vessels were mostly poorly equipped¹ for a stormy weather and could not cope with the waves exceeding 2–2.5 meters.

As a result, the gravest mass accident and boat loss for the whole post-Second World War history occurred on the Kerch Strait. Several persons died or went missing despite of the most efficient SAR (Search and Rescue) effort immediately organized.

The vessels that were at the Southern end of the strait within the zone of the raid load-unload regions² were caught in an extremely difficult situation. The waves reaching

¹ Note: At the Russian Port Caucasus on the Strait of Kerch, the Taman Handling Complex — a new floating oil-chemical port — was built to handle the petroleum products, sulfur and fertilizers transshipments from small to bigger boats. The small boats were ‘river-sea’ type, and could not withstand a high-waves sea. Therefore those boats were not supposed to enter the sea. With its shallow water, high winds, lack of natural shelter for the boats and the rapid formation of water spouts possibilities, the Kerch Strait was an unsafe place where accidents were likely to happen. In addition, most of the boats were old, for instance the *Volgoneft-139* tanker was built in 1978, *Nahichevan* — in 1966, *Volnogorsk* — in 1965, and *Kovel* — in 1957.

² Transshipment areas (Fig. 2) are located in the shallow waters of the Kerch Strait Southern part without a natural shelter from storms. When ships lie at anchor in the Southern area of the Kerch Strait, as well as at the berth with the coordinates 45°06'N, 36°33'E, they are positioned about 15 miles away from the place of refuge (the Northern area of the Kerch Strait which is well protected from the Southern waves by the Tuzla Island and Chushka Spit, being considered as the place of refuge). The berths in the Southern area of the Kerch Strait do not provide protection from the waves coming from the hazardous Southern directions especially.

5.4 m height and arriving from the Black Sea were taking tankers and dry-cargo carriers away from their anchors to wash them aground at the Kerch and Taman Peninsulas. In total, thirteen boats³ suffered an accident as a result of the storm, and of them four dry-cargo carriers and one tanker sank⁴ (Fig. 2).



Photo: The storm on 11th of November, 2007, <http://englishrussia.com/index.php/2007/11/13/storm-hdr/>



Photo: The high waves nearby Novorossiysk on 11th November 2007, by *Alexander Kuznetsov*.

The SAR (search and rescue) operations were unique, dangerous and difficult due to the gale wind up to 35 m/s and heavy waves. Russian and Ukrainian SAR units were engaged in real self-denial operations. Helicopters could not take part in rescuing people due to the stormy weather conditions. Despite of all, 35 crewmembers

³Three dry cargo ships sank in the Kerch Strait — *Volnogorsk*, *Nahichevan*, *Kovel* (Russian flag); the *Hach Ismail* sea-going dry cargo ship (Georgian flag, Syrian crew) sunk near Sevastopol and 15 persons went missing. Six vessels stranded — the *Vera Voloshina* dry cargo ship (Ukrainian flag) — near the Sudak village off the Meganom Cape in Crimea, after stranding, the ship's hull broke in two, but the crew did not suffer; the *Ziya Koc* sea-going dry cargo ship (Turkish flag, Turkish crew) and *Captain Ismael* (Georgian flag, Syrian crew) — in Novorossiysk, the *Dika* and *Dimetra* barge vessels (Russian flag) — in the Kerch Strait, the *Sevastopolets-2* ship crane (Russian flag) — South-East of the Kerch Strait; two ships were damaged (the *BT-3754* barge and the *Volgoneft-123* tanker ship with a crack in her hull (Russian flag) — in the Kerch Strait. The *Volgoneft-139* tanker (Russian flag) ship-wrecking in the Kerch Strait is described in more detail in Chapter 4.5

⁴Later, Mr. Valentin Pilipenko, the ex-Captain of the Port of Kerch listed the reasons for the Kerch accident as follow: lack of preparedness of the 'river-sea' boats captains to sail in marine areas, especially at the high-waves sea; lack of experience in using the life-saving equipment; poor communication (none of the vessels in distress could give a signal SOS prescribed by the international documents, attempts to use life rafts and evacuate the sailors were unsuccessful, two of the boats were lost of contact, i. e., *Volnogorsk* and *Nahichevan*, and information about their fate came from nearby vessels. And the last but not least: in pursuit of profit the vessels owners often restricted their captains to act in accordance with legal documents violating by this the established rules.



Photo: Berths and a queue of ships at anchorage in the southern part of the Kerch Strait (Booklet, 2009).

from four ships had been salvaged and hospitalized. Eight people from the sunken vessel *Nahichevan* did not survive — four sailors were found dead on shore two days later, four went missing.

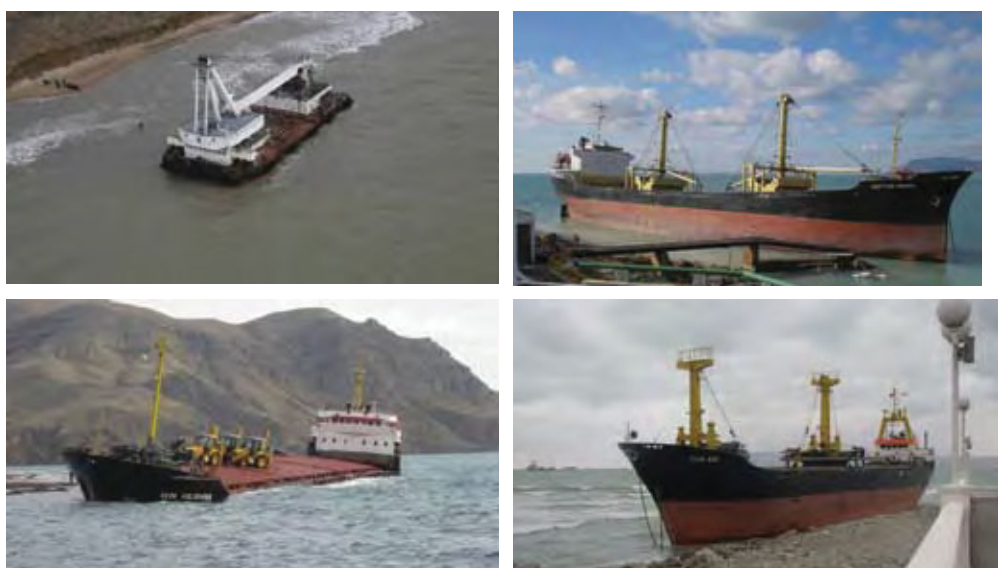


Photo: The *Sevastopolets* floating crane in the Kerch Strait, the *Captain Ismael* dry cargo ship stranded in Novorossiysk, the *Vera Voloshina* cargo ship aground in Crimea and *Ziya Koc* dry cargo ship in Novorossiysk, photo re-drawn from Booklet, 2009, and by *Alexander Kuznetsov*.

The *Vologoneft-139* motor tanker and the *Volnogorsk*, *Nahichevan* and *Kovel* dry-cargo motor vessels anchored in the Kerch Strait were virtually torn apart by the storm. The *Vologoneft-139* boat broke into-two and its bow sank in vicinity of the main ship channel of the Strait at the 10 m depth. The stern section drifted by wind to north and touch the ground at 45°15'5 N and 36°31'8 E. From this tanker leaked about 1300 tons of heavy fuel⁵, and it happened approximately five km to the West from the Tuzla Spit (Fig. 2). An immediate attempt to prevent oil from leaking from the wreck by using

⁵Note: The Russian Federation and Ukraine have not adopted officially the Black Sea Regional Contingency Plan, though the Plan was recognized as fully operational during a number of Black Sea regional exercises aimed to enhance the oil spill preparedness and response of the Black Sea coastal states (DELTA Exercises — SULH 2007, RODELTA 2009, see BSC Newsletters N 10 — http://www.blacksea-commission.org/_publ-Newsletter10.asp#1; and N 12 — http://www.blacksea-commission.org/_publ-Newsletter12.asp#a2). Russian Federation plans to adopt the RCP in 2011. Ukraine is not yet ready.

booms appeared to be unsuccessful due to the currents prevailing on the Strait. Shortly afterwards, the spill hit the coasts of Russia and later of Ukraine. Large amounts of heavy fuel oil mixed with algae covered the shore trapping and killing thousands of birds.

The other motor vessels of Volnogorsk (loaded with 2437 t of granulated sulfur), Nahichevan (2366 t) and Kovel (1923 t) did not sink immediately, but drifted towards the coast of Ukraine to the South from the Tuzla Island. It was later reported that the sulfur granulates discharged to the sea floor had been leaked from the Kovel motor vessel. The m/v Volnogorsk sank at 45°11'6 N and 36°31'8 E at the depth of 11 m. All the crewmembers (8 persons) left on the life raft. The Neptunia sea tug (Ukraine flagged) was sent to the life raft. The Nahichevan motor vessel sank at 45°12'0 N and 36°33'3 E; Kovel sank at 45°09'1 N and 36°26'6 E (Fig. 2).



Fig. 2. Map of the areas where the ships sank in the Kerch Strait on 11 November 2007: the Volgoneft-139 tanker bow (point 1) and stern (point 2; 45°15'5 N and 36°31'8 E), Volgoneft-123 (3; 45°11'6 N and 36°31'8 E), Nahichevan (4; 45°12'0 N and 36°33'3 E) and Kovel (5; 45°09'1 N and 36°26'6 E). Transshipment areas Nos 450 and 451 are marked in red.

When the Captain of the Kerch Port, Mr. Valentin Pilipenko got informed about the fate of Volgoneft-139 and Volgoneft-123, he immediately decided to evacuate all vessels in distress to the Northern part of the Kerch Strait. In this unique operation, under limited visibility and stormy wind (up to 35 m/s), 47 vessels were successfully navigated to a safer place passing the Strait.

Initially, the Black Sea Regional Contingency Plan (www.blacksea-commission.org) was not activated. Russia and Ukraine did not ask for international assistance to tackle the oil pollution accident and planned to cope with the disaster by means of their own oil spill response reserves. However, many international organizations volunteered

to render a help, while many people around the world got truly worried about the potential aftereffects of the Kerch accident and were ready to go to Russia or Ukraine to participate in the wild-life rescue effort and on-coast cleaning operations. As of 17 November 2007, hundreds of workers from the Ukrainian and Russian Ministries of Emergencies, civilian volunteers and representatives of international organizations were involved in the shoreline clean-up and rescue operations.



Photo: November 12, 2007, oil patches on the Tuzla Spit, <http://www.flickr.com/photos/>.



Photos: A birds stained with fuel oil sits at the shore near Russia's port Caucasus (published by Reuters: Mr. Alexander Natruskin), photo of Igor Golubenkov (NGO: Saving Taman, <http://www.flickr.com/photos/>).



Photo: Techniques were used for the clean-up operations on the coast, by Igor Golubenkov (NGO: Saving Taman), November 12, 2007, on Tuzla Spit, <http://www.flickr.com/photos/>.

Regardless of that effort, the accident became considered as an ecological catastrophe, one of the worst in the region and the gravest since the early 1990s (when a tragic accident of the M/T Nassia tanker happened on 13 March 1994: see <http://www.cedre.fr/>). Despite of all the sea and land response operations carried out to halt the oil pollu-



Photo: Military forces and volunteers engaged in clean-up operations on the coast, by Igor Golubenkov (NGO: Saving Taman), November 12, 2007, on Tuzla Spit, <http://www.flickr.com/photos/>.

tion, the expectations emerged that the consequences of the accident would be felt for several years on — environmentally and socio-economically. A number of public institutions and agencies jointly with commercial companies got engaged in determining the damage inflicted on the ecosystems. Their produced figures and numbers were enormous and varied by more than three orders of magnitude to range from tens of millions to hundreds of billion roubles, while Ukraine was initially about to claim billions of USD from Russia in compensation for its sustained damage.

Many central TV and radio channels presenters kept informing the public in their news blocks about the rescue efforts and measures taken to reduce the sustained damage. Newspapers kept reporting conflicting figures and forecasts, and some of them were expecting the oil slick to reach the coasts of other Black Sea states as well by means of the currents.

It became both necessary and apparent to determine as soon as possible potential ways of spreading of the oil and sulfur discharged into the sea, as well as the actual and potential impact of these hazardous substances on the ecosystem conditions in the region of the Strait and adjacent water space both at the time straight after the accident, and for a longer-term period. A number of organizations from different agencies both in Russia and Ukraine in the course of the first several days following the accident had managed to carry out an initial oil-fuel spread assessment. Further on, during 2008–2009 numerous scientific institutes conducted complex observations in the Kerch Strait and adjacent water space of the Black and Azov Seas to assess the state of the environment and impact of the Kerch accident. In carrying out the environmental analyses and economic assessment the EC and UNEP participated as well.

The Kerch accident became the most studied oil spill event in the world — numerous inspection trips on coast and at-sea and more than 60 complex cruises were or-

ganized, and millions were spent for the post-disaster needs assessment. Numerous papers, brochures and books were published, and certain are still planned for publication in Russian and Ukrainian. Herewith, we would rather analyze and summarize vast volumes of published and unpublished data, and information materials compiled during more than two years after the accident that have consolidated the view points of different Russian and Ukrainian public and academic authorities, why the Kerch disaster happened, as well as about its impact and lessons learnt.

The present monograph carries information and data about the sequence of events, contingency plans activated for the post-accident response to include the cleanup operations and remediation activities, emergency phase monitoring as well as numerous complex ecological observations carried out afterwards during the period of 14 November 2007—December 2009. As well, it describes meteorological conditions prevalent within duration of the extreme storm, characteristics of the wind waves and sea currents predominant at the time of the accident, pollution-zone parameters received through mathematical simulations jointly with aerial and visual observations, results of the satellite surveys over the surface waters and coasts pollution extent within the accident area, and the operational monitoring data on the land and the sea. Analysis of pollution dynamics in the Kerch Strait and its adjacent sea space for the two years that have passed since the time of the accident (water, bottom sediment and biota in November 2007–December 2009) is presented. A detailed complex assessment of the Kerch catastrophe magnitude and its impact on the coast and marine environment is included also. So far, the monograph remains the most complete compilation of available materials and data collected in the Black Sea region after the accident. How accidental was this disaster, which has had such a negative effect on the recreational image of the northern Black Sea coast? Who is to blame for the wrecks — the traffic controllers, the owner of the ship or the charter party? What is the level of oil spill pollution preparedness and prevention in the Black Sea region? The book answers all these questions and many others.

Summing up their research results, the authors consider the experience received in the course of assessment of an emergency situation produced by the Kerch Strait accident. Also, lessons learnt during and after the Kerch disaster would contribute to enhancing the shipping safety standards, building stronger prevention and preparedness effort in the Black Sea region in case of an oil pollution accident and improve regional cooperation in emergency situations at the sea.