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**Aircraft, Maritime and Railway Accident Investigation Directorate  
Maritime Accident Investigation Unit**

**FINAL REPORT**

**Investigation of very serious marine casualty –**

**SINKING OF *M/V “VANESSA”* IN AZOV SEA  
on 03.01.2008**



**2009**

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### 03. Used abbreviations:

<b>IMO</b>	- International Maritime Organisation
<b>LZRJ</b>	-Radio call sign of <i>m/v „Vanessa”</i>
<b>DWT</b>	-Deadweight – ship’s full loading capacity
<b>MacGregor</b>	-A hatch cover type
<b>BR 100 A5</b>	-A classificational symbol
<b>AIS</b>	-Automatic ship Identification System
<b>MRCC</b>	-Maritime Rescue and Coordination Center
<b>TCCK</b>	-Traffic Control Center of Kerchen strait
<b>EAMA</b>	-Executive Agency “Maritime Administration”
<b>BN</b>	- Beaufort number from Beaufort wind force and wave height scale

All times stated are local time(UTC +2 hours).

The investigation was conducted to identify the circumstances in which the accident occurred, its causes and consequences to prevent such accidents in the future. This report does not look for a fault and a liability and should not be used in court proceedings.

## 1. Summary

On January 3, 2008, at about 0215, *m/v "VANESSA"* sunk into the Azov Sea during a passage from the port of Berdyansk to port of Burgas under heavy hydrometeorological conditions. As a result, there were human sacrifices, loss of the ship and the cargo. No environmental damages had been reported.

## 2. Actual information

### 2.1. Vessel's data



*m/v "VANESSA"*

Flag of the vessel: Bulgaria, Port of registration - Burgas

Ship identification: IMO № 7367914, call sign LZRJ

Main characteristics: 1 853 register tons, 1 126 net tons, 3 115 DWT, loading capacity ~ 3 020 tons, built in 1974 in Bodewes' Scheepswerven B.V., Hoogezand, Netherlands under the rules and the supervision of Bureau Veritas.

Length max - 80,37 m, Width-13,40 m, Height of the board - 6,72 m.

Draft max - 5,57 m.

Cargo holds - 2, Hatch cover – MacGregor.

Main transverse bulkheads - 5 pcs.

Main Engine - 16 GV-D, BRONS, 1103 kW, Fuel - diesel oil.

Propeller - propeller with fixed pitch.

Rescue equipment: liferafts - 2 pcs, starboard side - one for 15 persons, portside - one for 16 persons.  
Inflatable duty whaleboat - 1 pcs, lifebuoys - 8 pcs.  
Life jackets - 14 pcs, thermal-protection survival suits - 14 pcs.  
Shipowner - "Stellamar" Ltd., Burgas.  
Operator - "Board Marine" Ltd., Burgas.  
Crew of the ship - 10 persons.  
Class repairs - May-June 2006 at "Port Burgas" JSC Shipyard.  
Measurement of ship structure residual thickness - May 22, 2006.  
Last docking - June 14, 2006.  
Ship's class - Bulgarian Register of Shipping BR- 100 A5 General Cargo  
Machinery - BR MC.  
Class validity - till April 25, 2011.

## 2.2 Voyage information

*M/v "VANESSA"* arrived at Berdyansk, Ukraine on 31.12.2007 at 1645. The ship was moored to the quay at 1855. The cargo operations commenced at 2130 on 31.12.2007 and 2 935.05 tons of metal had been loaded. Loading completed at 0030 on 02.01.2008. The load consolidation was completed at 0100. On 02.01.2008, at 1140, the *m/v "VANESSA"* sailed from the port of Berdyansk. Ship's arrival in the Kerch Strait was estimated at about 2200 on 02.01.2008.

## 2.3 Information about the marine casualty

Accident category: a very serious casualty (according to Art. 4, para 1, item 1 of Ordinance № 23) - with loss of human lives, sinking of *m/v "VANESSA"* and loss of cargo.

Date: 03.01. 2008, at 0215.

Coordinates and location of the marine casualty: Azov Sea, Latitude  $\varphi = 45^{\circ}47.6'N$ , Longitude  $\lambda = 036^{\circ}42.8' E$ .

Meteorological conditions: wind of 18-20 m/s from ENE, heavy sea with wave height up to 3 m, air temperature: - 6 °C, sea water temperature : + 1°C.

Human factor information: on the bridge of *m/v "VANESSA"* during the accident were the captain, the chief engineer, the chief officer, the watch officer, the helmsman and the Ukrainian sea pilot; the watch engine officer was in the E.R.(engine room). Crewmembers, engaged in their watch duties, and the rest of them possessed the necessary certificates of competency and professional experience in accordance with the statutory requirements.

## 2.4 Consequences

9 crewmembers and 1 Ukrainian pilot died, loss of the ship and the cargo. Until the publication of the report there was no serious damages to the environment.

## 3. Shore authorities' participation.

From 2232 on 02.01.2008, the *m/v "VANESSA"* was in the AIS area of Vessel TCC "Kerch traffic control". From 0003 on 03.01.2008 the ship maintained a permanent radio VHF connection to the control center. At 0005, the center was informed by the ship about the breakaway of the port side bulwark and the likelihood that the ship would need a shore help. The center confirmed the information receiving.

The captain tried to change the course of the ship through starboard side, down the wind and wave but unsuccessfully.

At 0021, the center was informed about the ship's course change into the wind and wave, the new course was about 70°.

At 0044, the ship reported a 7° heel to the portside. At 0104 the ship reported a 10° heel to the portside.

At about 0150, the captain ordered the liferaft on the starboard side to be prepared to

abandon the ship and the watch officer to prepare the ship's documentation.

At 0201 on 03.01.2008, a distress alert signal had been broadcasted from *m/v "VANESSA"* and the captain ordered the crew to abandon the ship.

At about 0215 the ship sunk to the bottom of the sea of Azov. The broadcasted signal was received by MRCC of Russia (MRCC Novorossiysk) and Ukraine (MRCC Odessa), the Vessel TCC "Kerch traffic control" and the vessels in the southern region of the Azov Sea. The Centers activated the available search and rescue means from Russia and Ukraine in the areas of their responsibility. During the accident and broadcasting of the distress signal in the southern part of the Sea of Azov had been situated the following ships:

- *m/v "Tegucigalpa"*, 7 468 register tons, 11 849 DWT, 1975, Belize flag;
- *m/v "Gulf"*, 999 register tons, 1977, Panama flag;
- *m/v "Antares"*, 4 008 register tons, 1970, Cambodia flag;
- *m/v "Belize City"*, 9 965 register tons, 1976, Belize flag;
- *m/v "Aysenur"*, 1 973 register tons, 1973, flag Dominica;
- *m/v "Angarsk"*, 2 528 register tons, 1988, flag Russia;
- *m/v "Silver"*, 2 516 register tons, 1968, Cambodia flag;
- *m/v "Feofan Shokhirev"*, 4972 register tons 1986, flag Comoros.

The captain of *m/v "TEGUCIGALPA"* decided to head to the scene of the accident, and after receiving confirmation from VTCC "Kerch", it had moved at a speed of about 6 knots, as at about 0442, about 3 miles from the disaster signal transmission point, a "man overboard" alarm was announced. The meteorological conditions were: wind speed of 18-20 m/s from the ENE, sea 4-5 BN, wave height 2.5-3 m.

The crew of *m/v "TEGUCIGALPA"* had prepared for the rescue operation. Due to the lack of powerful searchlights, the Aldis lamp was used as a mean of searching for those in distress in the sea water. Due to the weather conditions, the captain of *m/v "TEGUCIGALPA"* decided not to descend the rescue boat and use it for a rescue operation. At about 0500 they noticed glimpses in the water by a man dressed in a survival suit and had pointed at him. By 0510 they noticed a second man about 20 meters apart from the first one. Coordinates of place:  $\varphi = 45^{\circ}46.7'N$ ,  $\lambda = 036^{\circ}40.29'E$ , at about 1.5 nm SW from the site of sinking. They found that both had been dressed in survival suits, but with hoods removed, showing no signs of life. The attempts to take the bodies out of the water failed.

At the same time, on the bridge of *m/v "TEGUCIGALPA"* the duty officers noticed a white flashing light at a distance of 4-5 cables and ship headed toward it. At about 0520, they approached the light and noticed a man with a lifebuoy emitting a light signal and holding on to a wooden pallet. The man was in conscious and shouting in Russian. From *m/v "TEGUCIGALPA"* crewmembers threw to the castaway a lifebuoy with a rope. The castaway, a watch engineer, managed to catch the lifebuoy, and then they tried to pull him off the deck of the ship, but unsuccessfully, and he had been swept away by the waves. Approximately at the same time, two flashing lights were noticed westward by the staff on the bridge, but, shortly later, they lost their visual contact; the lights had gone. *M/v "TEGUCIGALPA"* carried out two more search circulations in the area, moving in the west direction, but without a success to find anyone in the water. During the last maneuver, the ship began to experience severe difficulties as regard to the steerability of the ship. At 0710 the captain reported this to MRCC Novorossiysk, from where he received an answer the ship to leave the scene of the accident and to go to a shelter.

The captain of *m/v "TEGUCIGALPA"* contacted by the VHF radio station the closest *m/v "SILVER"*, about 3 miles from the scene of the accident, to assist in the rescue operation. The captain of *m/v "SILVER"* refused due to difficulties in maneuvering and maintaining its course.

At 0203 on 03.01.2008, VTCC "Kerch" contacted *m/v "ANTARES"* for inclusion in the search and rescue of the castaways. The captain of *m/v "ANTARES"* also refused to assist. The other ships located in this area of the Sea of Azov did not take action to search and rescue and assist the castaways.

At about 0415, from Temriuk Harbor, sailed the motor tug "*MERCURY*", 456 register tons, 1975, flag Russia, to carry out the search and rescue operation. At 0930 the motor tug "*MERCURY*" arrived at the scene of the accident, they found two people dressed in survival suits, showing no signs of life, and took them on board. These were the bodies of the chief engineer and the chief officer. After that, the rescuers from the tug found and managed to pick up the watch engineer alive. From the tug "*MERCURY*" they saw the body of another man dressed in a survival suit, but they were not able to take it out of the water due to the severe weather conditions. At about 1030 the *m/t "MERCURY"* had got a critical icing, stopped the search and rescue operation and headed to Caucasus port, where it arrived at 1330. The rescued engineer was transported to the Temryuk hospital for emergency medical assistance.

Between 12-19.03.2008, the bodies of the captain, watch officer, watch engineer, three helmsmen, seaman, and sea pilot had come to the surface of the Azov Sea.

#### **4. Description of the accident:**

On 29.12.2007, at 0230, the *m/v "VANESSA"* sailed from Burgas port and arrived at 1645 on 31.12.2007, at Berdyansk port. On 02.01.2008 at 0100 the loading of cargo completed. 2935.05 tons of metals had been loaded, of which 935 t metal billets and 2000 t RAMFSA.

The calculation of ship's stability, loading, load distribution under an approved load plan and load consolidation had been met in accordance with the applicable requirements. Before the ship's sailing, the ballast tanks and the bilge of cargo spaces had been checked. No presence of water was established. Upon completion of these operations, the ship's agent filed a port pilot request for *m/v "VANESSA"* to be taken out from Berdyansk port. The answer from the port pilot on shift was as follows: "At that moment the wind speed is 13-15 m/s, at this wind speed ships are not taken out from Berdyansk port, we will wait for dawn." The provisions of Art. 2.3 of the Mandatory Berdansk Port Arrangements (Обязательные постановления по ГП Бердянскому ордену „Знак почета” морскому торговому порту”) prohibit the movement of ships at a wind speeds of more than 15 m/s.

At 0900, the port pilot on shift reported that the wind speed at that moment was 8-10 m/s, and under these conditions permission from the ship's departure port control could be obtained. On 02.01.2008, at 1140, *m/v "VANESSA"* sailed from Berdyansk port. Ship's arrival in the Kerch Strait was estimated at about 2200 on 02.01.2008. After passing the approach channel of Berdyansk port, the ship headed to the Kerchen Strait.

At about 1600, the weather begun to deteriorate, with wind speeds higher than 18 m/s. and the height of the waves above 2 meters, the air temperature of -8 °C. Due to the increased on-board shaking and vibration, at about 1700, the captain was forced to reduce the main engine revolutions and the speed of the ship. About 2330 on 02.01.2008, when the ship was 20 miles away from the approach to the Kerchen Strait, two strong impulses from the portside had been felt.

At 2350 it was ascertained that the portside bulwark, in the cargo holds area had been torn and missing.

At 2352, the captain changed the course of the ship with a left turn, into the wind and waves at 70° and decreased the speed to about 1.5-2 knots. The list of the ship was 1-2° to the portside. A survey was made, as far as possible from the bridge and from the platform in front of the superstructure, and it was found that some vent pipes of the portside ballast tanks had been thrown away. The captain ordered a check for water presence in the cargo holds and the portside ballast tanks.

At about 0040, the bilge pump sucked and jettisoned for a short time water only from the bilge spaces of cargo hold № 2. The ballast pump was started to drain the portside ballast tanks № 2 and 3. The list of the ship increased to 7° to port.

At 0104 on 03.01.2008 the list of the ship reached 10° to port and remained such till 0139. Ballast started to be taken in the starboard ballast tanks 3 and 4, for the straightening of the list to the portside.

At 0148, the ballast reception was stopped in order not to reduce the ship's buoyancy reserve.

At about 0150, the captain ordered to prepare the starboard liferaft to abandon the ship.

At 0201 on 03.01.2008, a distress alert signal was broadcasted from *m/v "VANESSA"* and the captain ordered the crew to abandon the ship.

At about 0215 on 03.01.2008 the ship sunk.

## 5. Analysis:

Cargo holds of *m/v "VANESSA"*:

Hold № 1 is located between the frames № 79 and № 110, with dimensions: length 18.70 m, width 12.50 m, height (without coamings) 5.20 m, approximate hold volume 1 215 m<sup>3</sup>;

Hold № 2 is located between the frames № 23 and № 75, with dimensions: length 31.40 m, width 13.00 m, height (without coamings) 5.40 m, hold volume 2204 m<sup>3</sup>.

*M/v "VANESSA"* was loaded with cargo – 2 935.05 t of metals. The calculated distributed weight of the load in cargo hold № 1 was 5.10 t/m<sup>2</sup> (with a maximum permissible weight of 9.50 t/m<sup>2</sup>), and in cargo hold № 2 was 5.07 t/m<sup>2</sup> (with a maximum permissible weight of 9.50 t/m<sup>2</sup>). The ship sailed from the port of Berdyansk with a draft at the bow of 5.32 m, at the stern of 5.72 m, the average draft of 5.52 m (permissible maximum draft of 5.57 m), at a board height of 6.72 m. The midship freeboard height was 1.20 m, the theoretical reserve buoyancy was about 1 040 t, the calculated transverse metacentric height GM = 1.303 m, the shaking period - 9 sec. The calculations had shown that when flooding the bottom ballast tanks (total of 502 t) or cargo hold № 1, the ship would retain buoyancy and unsinkability. Upon flooding of cargo hold № 2, the ship loses its reserve buoyancy and unsinkability due to the greater length of this compartment and the designated freeboard under the International Convention on Load Lines, 1966. Prior to sailing, the captain of *m/v "VANESSA"* had submitted to Berdyansk Port authorities a general declaration, ship's stability calculation, a Reed's Diagram, and all other required documents.

On 02.01.2008, at 1140 the *m/v "VANESSA"*, with the permission of the harbour master and with the port pilot on board sailed from Berdyansk port. Meteorological conditions: wind speed 8 m/s, from northeast (about 60°), air temperature: -8 °C, water temperature: + 2 °C.

At 1150, the ship left the port and sailed along the approaching canal axis with a course of 220.8°. The length of Approach Channel № 54 is 10.7 nautical miles. About 1200, the port pilot got off the ship in the area of the pilot's point. The sea pilot was transferred by the pilot cutter from another ship aboard *m/v "VANESSA"*, and the ship followed a recommended course of 126° at a distance of 7.5 miles.

From about 1330 the ship had been following a recommended course of 184° towards the Kerchen Strait. The distance to the entrance of the Strait (Varzovskiy Bouy) was 64.5 miles.

The estimated time of arrival of the ship in the Kerchen Strait was at about 2200 on 02.01.2008, at a speed of 8 knots.

In the broadcasted and accepted forecast, on 02.01.2008 at 1200, "Storm Warning № 4, 5" was indicated that the wind speed from the east would be at about 15 m/s with wave height of 1.5-2.5 m. On 03.01.2008, in the morning, wind speed had been expected to reach 18-23 m/s, wave height 2.0-4.0 m, slow icing of ships. In this forecast, the ship's management had relied on the ship to arrive in the protected Kerchen Strait before the weather to deteriorate. According to data from *m/v "TEGUCIGALPA"*, which was in the same area, the weather began to deteriorate after 1600 on 02.01.2008, about 14 hours earlier than predicted in the broadcasted storm warning. With a wind direction of about 70° and a ship's course of 184°, the resulting wind direction and waves relative to the ship's hull had a pitch of about 115° port side.

Due to the increased shaking, shocks and vibrations of the hull, at about 1700 on 02.01.2008, the captain was forced to reduce the engine revolutions and speed of the ship. Until the course change to 70° at 2352 on 02.01.2008, the ship passed 45.5 miles at an average speed of 5.7 knots. At a wind speed of over 18 m/s and a wave height of about 3 meters, the structure of the ship had been continuing to undergo bending and twisting tensions, as well as wind and wave pressures. Ship sailing under such conditions causes a dangerous phenomenon such as parametric resonance, turning the board into wind, reduction of stability.

At about 2330 on 02.01.2008, the ship had undergone a damage to the structure, as the portside bulwark being detached. Damaged and detached were vent pipes of portside ballast tanks. The inner diameter of the vent pipes is  $\Phi=88.9$  mm. The maximum volume flow of water entering such a cross-section is about 10 m<sup>3</sup>/h for a ballast tank. For an hour through the vent pipes in the portside ballast tanks, № 2 and № 3, it was possible to enter at about 20 tons of overboard water from which the ship would have been listed under the 1° to port.

At 0044, the crew reported a 7° list to portside. This list could have been obtained with the entry of approximately 110 t of overboard water (for about an hour) in the portside spaces of the cargo holds, due to damage to the outer shell plating of the ship's hull. The main deck of the ship, in front of the superstructure, where the free board is 0.90 m, had entered the water with a list of 7.6 degree. At 0104 on 03.01.2008 the crew reported a 10° list to the portside, which could mean that the flow rate of the incoming water had reached a rate of about 150 m<sup>3</sup>/h. This showed, that the water had also entered the ship, (beside the detached vent pipes) due to the broken intergrity of the hull.

The ballast pumps, 2 pcs., had a theoretical output of 80 m<sup>3</sup>/h. In the attempts of the crew to straighten the list of the ship, one of the pumps had been used to empty the ballast tanks and cargo holds, without visible effect. The ship's main deck at the midship section entered the water at a list of 10.1° and the deck was flooded by waves with a water mass of over 300 t, giving a critical condition to the ship.

At 0201 an emergency signal was broadcasted. The ship had lost completely its reserve buoyancy.

The declared depths in the navigational charts for the area of the accident were in the range of 11-12 meters. The deck of the navigational bridge was located above the keel of the ship at 13.50 m height. The captain probably had counted that the bridge, including some of the cabins and spaces beneath it, would remain above the water and the ship would not sink, but would be aground.

At 0215 the ship sunk completely to the bottom of the Sea of Azov, as the water reached a little above the funnel, the keel of the ship lied at a depth of 17.60 m. The mast remained above the water and was in a vertical position, indicating that the ship had lied on a flat keel, which showed that the load had not been shifted.

**Crew:**

As evidenced by the attached certificates, the captain and the crew were familiar with their duties, had had the necessary competency and professional experience to operate the ship, being familiar with the area of sailing and its particularities.

In the course of the investigation, it was found that:

There was no certified copy of *m/v "VANESSA"* stability information. - according to Regulation II-I/22.1 of the Annex to SOLAS Convention and Rule 10 of Annex I to the International Convention on Load Lines, 1966, EAMA have to strictly verify and validate the information for the stability of ships sailing under the Bulgarian flag;

In the document "Ship's Safe manning" certificate, issued on 14.06.2006 by EAMA, the requirements for the positions of "Chief officer" and "Second engineer" were not specified. EAMA should review the documents issued for safe manning of the ships sailing under the Bulgarian flag, for compliance with the applicable requirements.

## **6. Conclusions:**

### **6.1. Main cause of the accident.**

The main cause for the occurred very serious casualty was the combination of:

- complex hydro-meteorological conditions, expressed in a strong storm (wind: 18-23 m/s from NE), waves's height: 3-4 m, low temperatures: -8°C in the air and 0°C of sea water, icing.
- significant operational ship's life (34 years service), which might had led to a fatigue of the material and hidden corrosion, leading to a reduced hull strength.

The joint influence of the above two factors was the most likely reason for the structural failures occurrence - breaking off the portside bulwark and cargo hold vent pipes.

More accurate information about the actual hull, bulwark, and structural damages could only be ascertained by an underwater survey or taking out the ship.

### **6.2. Additional factors which influenced the undertaken management decisions:**

- the decision of the captain to depart from the port of Berdyansk was based on the weather forecast for 02.01.2008. Wind: 15 m/s from ENE and wave height: 1.5-2.5 m, where the port was not closed and the harbor master could not refuse a departure. The expected deterioration of the weather had been expected on 03.01.2008, and the estimates showed that ETA of the ship in the Kerchen Strait was at 2200 on 02.01.2008, before weather deterioration;
- because of the storm conditions, after the portside bulwark had been broken and the overboard water incoming, the crew was unable to actually assess the situation;
- it was clear from the second engineer's statement that the captain had relied on the ship to be aground at 11-12 m depth, and the bridge being above the sea water surface. In fact, the ship entered the mud at 4-5 m depth;
- extremely bad weather conditions greatly hampered the expected help from a rescue ship or a helicopter.

## **7. Recommendations:**

### **7.1 To EA "Maritime Administration"**

- to require from shipowners of ships sailing under the Bulgarian flag to develop specific guidance, in accordance with IMO MSC/Circ.1143 from 13.12.2004, (Guidelines on early assessment of hull damage and possible need for abandonment of bulk carriers), including ships carrying heavy loads such as steel profiles and billets;
- on ships sailing under the Bulgarian flag, except for tankers and bulk carriers, and for more than 20 years from the date of their construction, to carry out the prescribed by the SOLAS Convention, mandatory periodic construction inspections under an extended authentication program of their seaworthiness for further safe operation.

### **7.2 To m/v "VANESSA" operator, "Boardmarine" Ltd. (Seaborn Trade):**

- to perform a management review and an internal audit of the implemented in the company and certified ship's Safety Management System, according to the ISM Code and to apply the relevant corrective and preventive actions;
- to prepare and implement a program for detailed familiarization of the command staff of the ships operated by the company with the structural features and monitoring of the actual technical condition of the vessels, keeping records about it;
- to provide detailed knowledge of the command staff with the information about the stability of the ships operated by the company;
- to monitor and analyze the conduct of trainings and drills of the ships' crews in accordance with the provisions of Regulation III/19 of the Annex to SOLAS Convention.
- EAMA and the shipowner to notify in written AMRAI Directorate on the implementation of the safety recommendations.

### **1. Applied normative acts:**

- Merchant Shipping Code(SG, is.55/14.07.1970 and 56/17.07.1970, in force since 1.01.1971, amend., is. 108/29.12.2006);
- Ordinance №23 on Investigation of Accidents in Maritime Areas and Inland Waterways (SG № 95/29.11.2005);
- International Convention for the Safety of Life at Sea, 1974/88 (SOLAS);
- International Convention on Load Lines, 1966;
- Code on Intact Stability for All Types of Ships Covered by IMO Instruments, Resolution A.749 (18);
- International Convention on Standards of Training and Certification of Seafarers for Watchkeeping Service, 1978/1995 (STCW) (by Decision № 192 of the Council of Ministers /22.12.1981, SG № 31/8.04 .2005);
- Ordinance № 4 on the Recognition of Inspection Bodies for Ships and Shipowners (SG № 7/27.01.2004, amend., SG № 24 / 21.03.2006);
- IMO Resolution A.890 (21) - Principles of Ship's Safe Manning;
- Ordinance №5 on Ship Documents (SG № 88/8 October 2004, Suppl.SG №109/ 14.12.2004, amend. and suppl., SG № 73/09.09. 2005);
- Ordinance № 6 on the Competence of Seafarers in the Republic of Bulgaria (SG, № 101/4.12.2007);
- Обязательные постановления по Бердянскому морскому торговому порту.

## 9. Applications:

1. Ship's documents of *m/v "VANESSA"*.
2. Stability information for *m/v "VANESSA"*.
3. Report on measuring the residual thickness of the structure, 22.05.2006.
4. Quality control reports from class repairs May-June 2006.
5. Hull works performed during the May-June 2006 class repair
6. Load declaration, cargo plan, ship stability calculation in Berdyansk port.
7. Crew list.
8. Documents of competence and training of *m/v "VANESSA"* crewmembers: captain, chief engineer, chief officer and officers of the navigation and machinery watch during the accident.
9. Navigational chart of the Azov Sea.
10. Forecast for 02 and 03.01.2008.
11. Radio exchange record from 0000 till 0215 on 03.01.2008.
12. Automatic vessel tracking system records in the area of accident on 03.01.2008.
13. Crew witness, documents and a copy of the logbook from 02 and 03.01.2008 of *m/v "TEGUCIGALPA"*.
14. Watch engineer's testimony.
15. Berdyansk port pilot's testimony.

The annexes and the materials from the investigation of the very serious marine casualty with *m/v "VANESSA"* are stored in the archives of the AMRAI Directorate, MTITC.