

# Traffic Separation Schemes and Mandatory Ship Reporting System in the Baltic for the approaches to the Polish ports in the Gulf of Gdańsk

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**ABSTRACT:** Paper contains a proposal to establish a traffic separation schemes in accordance with the provisions of SOLAS regulation V/10 and mandatory ship reporting system in accordance with the provisions of SOLAS regulation V/11 in the Polish territorial and internal waters in the Gulf of Gdańsk. Presented proposal has been sent for consideration to other Baltic countries including Russian Federation at the end of March 2007 and in the event of their consent will be presented for approval during nearest session of the IMO Sub-Committee on Safety of Navigation.

## 1 INTRODUCTION

### 1.1 Background

The volume of shipping operating to the Polish ports in the Gulf of Gdańsk is steadily increasing and now is reaching over a 7800 visits of vessels yearly (2006), not including the local domestic traffic, fishing boats and leisure crafts. More than 2700 ships of above comprise chemical tankers, gas tankers and oil tankers, including VLCCs up to maximum accommodated draught on the Baltic (presently 15 meters) and the length overall of 340 meters. There has been also considerable growth in passenger traffic in the Gulf of Gdańsk, including Ro-Ro passenger ferries, to more than 1000 ships yearly.

Sample of recorded tracks of ships equipped with AIS and sailing inside the Gulf of Gdańsk during summer period (2006) is presented on Figure 1.

A new deep-sea container terminal, currently being built in Gdańsk with a designed capacity 0.5 mln TEU yearly, shall yield a further considerable increase of container and Ro-Ro vessels traffic.

The Gulf of Gdańsk is not only a region of great economical importance for the national economy with respect to a number of branches, from the shipbuilding industry to tourism and recreation, but also a very vulnerable ecosystem. The growth of shipping traffic increases the risk of accidents, especially the risk of oil pollution. A spill could have disastrous effects on the vulnerable nature of

the area such as fish spawning areas and breeding, nursery and resting areas for birds and marine mammals.

Beginning from Hel Peninsula and around Gulf of Gdańsk coastline up to the Vistula Split, the following protected areas, including surrounding coastal waters, exist: Coastal National Park with a Puck Bay, Three Cities Landscape Park, Redłowo Cliff Reserve and Vistula Split Landscape Park. All of these protected areas have been submitted by Poland as Baltic Sea Protected Areas (HELCOM BSPA).

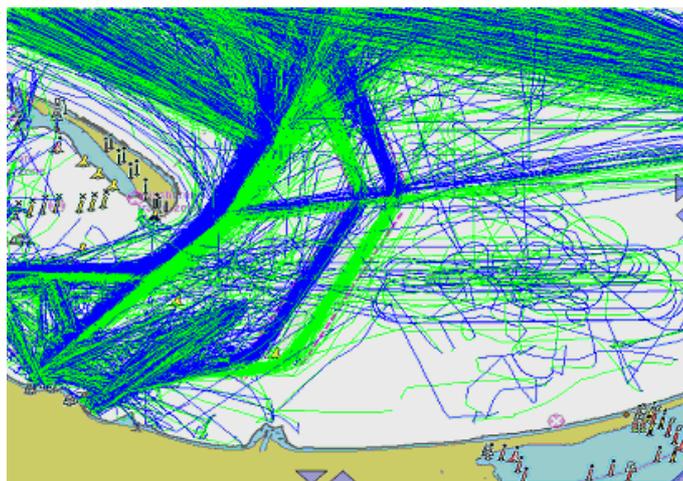


Fig. 1. Sample of record of tracks of ships equipped with AIS during summer period (2006)

The region of special attention is the internal part of the Puck Bay - a unique site on the south Baltic coast system of relatively warm, shallow seawaters.

Little salinity and little water dynamic and communities of rare and endangered vegetable and animal species characterize it. Communities of coastal halophytic meadows, rare in Poland, have survived on Puck Bay coast along with sets of birds connected with these vegetation systems. It is a spawning ground and habitat for many endangered species, including Harbour porpoise, a mammal of Phocaenidae family. Together with Vistula River Estuary, Puck Bay is also one of a major feeding and resting place for migratory birds as well as an important wintering place for many birds that hatch on the north Baltic and has been established as a bird protected area under EU NATURE 2000 network.

### 1.2 *History of the Traffic Separation Schemes and Mandatory Ship Reporting System in the Gulf of Gdańsk*

With a view to enhance the safety of navigation and the protection of the marine environment in the waters of the Gulf of Gdańsk, two traffic separation schemes for the approaches to the ports of Gdańsk and Gdynia were established under national legislation on 15 April 1980 (announced in Polish Notices to Mariners No 15/155/1980), revised and amended with Inshore Traffic Zone in 2003 (Polish Notices to Mariners No 16/312/2003).

The schemes have been designed based on the general principles and the requirements of ships' route-in adopted by IMO to follow as closely as possible the existing traffic flows while creating the prerequisite-sites for safe and orderly flows, clear of fishing grounds and recreational traffic. The establishment of the proposed schemes has therefore reduced the risk for pollution caused by collisions significantly in the area and this had a positive impact on the entire Baltic Sea area.

Furthermore the ship reporting system REPLINE HEL was established on 1 May 1986 (announced in Polish Notices to Mariners No. 17/202/1986) for ships proceeding to or from Polish ports situated in the Gulf of Gdańsk. Since 1 May 2003 the ship reporting system REPLINE HEL has become a part of VTS "Gulf of Gdańsk" reporting procedures, enhancing safety and efficiency of maritime traffic (as amended by Polish Notices to Mariners No. 16/311/2003). The VTS area of responsibility is that of the ship reporting area.

Ship reporting system was established in the Polish territorial waters in the Gulf of Gdańsk, south of parallel 54°45'N, based on the General Principles for Ship Reporting Systems and Ship Reporting Requirements, including Guidelines for Reporting Incidents Involving Dangerous Goods, Harmful Substances and/or Marine Pollutants as adopted by resolution A.851 (20).

The purpose of the reporting system is to secure ships safe navigation within the Polish waters of the Gulf of Gdańsk and to initiate immediate search and rescue and pollution prevention measures around a relevant position. It is also important to provide adequate information for the competent authority in order to respond effectively in the event of ship in need of assistance.

The routing measures and ship reporting system mentioned above have not yet been submitted to the IMO for adoption.

## 2 PROPOSAL

### 2.1 *Routing measures*

Proposed routing measures are designed to control the movement of ships entering and leaving ports of Gdańsk and Gdynia by means of two traffic separation schemes and two recommended routes located entirely within Polish territorial and internal waters:

#### 1. Traffic separation schemes:

##### 1.1. "EAST" consisting off:

- Two traffic lanes 1.0 mile wide;
- One intermediate traffic separation zone 0.5 mile wide in two parts: northeast and southwest; and
- One traffic separation line connecting two parts of the intermediate traffic separation zone.

##### 1.2. "WEST" consisting off:

- Two traffic lanes 0.75 to 0.5 mile wide (northeast part of the TSS) separated by traffic separation line;
- Two traffic lanes 0.5 mile wide in two parts (southwest and west) separated by traffic separation line;
- One precautionary area around buoy GN; and
- One associated inshore traffic zones.

#### 2. Recommended tracks between buoys:

- GD and NP; and
- GN and PP.

Proposed routing measures are shown on Figure 2.

### 2.2 *Navigational instruction*

Subject to any factors that may adversely affect safe navigation, ships proceeding from the Baltic Sea to the ports of Gdańsk and Gdynia and vice versa are strongly recommended to use the suitable traffic separation schemes. Ships approaching and navigating within the precautionary area shall navigate with caution and shall follow the recommended direction of traffic flow.

Ships engaged on international voyages proceeding between Gdańsk New Port (Nowy Port) (port, road) and Gdynia (port, road) shall proceed along

the 163° - 343° recommended track established between GD and NP buoys or transit along the proper one-way traffic lanes between GD, GN and NP buoys.

Ships engaged on international voyages proceeding from Gdańsk Northern Port (Port Północny) to Gdynia (port, road) or to Gdańsk New Port (Nowy Port) (port, road) shall, after leaving pilot near the buoy PP, proceed into north direction.

informed of the cancellation through Notices to Mariners and by VHF broadcasts from the VTS Centre. Ships reporting to the Centre will receive information on the recommended route through the ice and/or are requested to contact the regional ice-braking co-ordinator for further instructions.

Ships having defects affecting operational safety

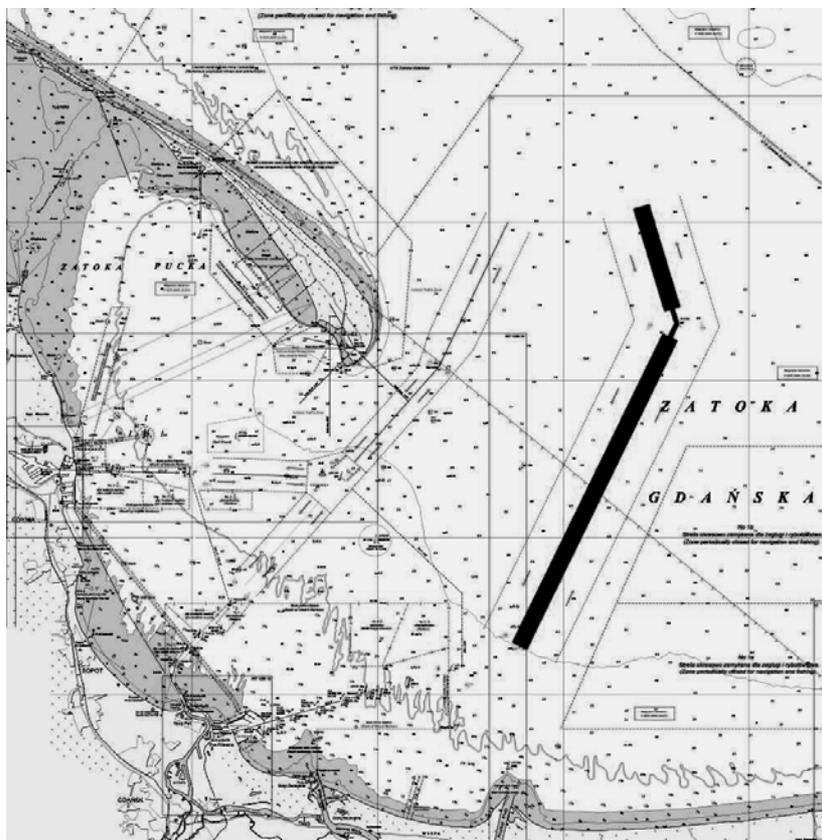


Fig. 2. Proposed routing measures on the approaches to the Polish ports in the Gulf of Gdańsk

After passing anchorage No 5 for tankers they shall alter course to 314° and steer into direction of the buoy GN established in the Precautionary Area, alter course at this buoy and proceed further along the proper one-way traffic lane.

Ships engaged on international voyages proceeding from Gdańsk New Port (Nowy Port) (port, road) or from Gdynia (port, road) to Gdańsk Northern Port (Port Północny) (port, road) shall proceed along the proper one-way traffic lane to the Precautionary Area established around the buoy GN, thence they shall alter course to 134° and proceed along recommended track into direction of the buoy ZS. After passing anchorage No 5 for tankers they shall alter course to south and proceed into direction of the pilot embarkation position marked by the buoy PP.

During severe ice conditions the traffic separation schemes may be declared not valid. Mariners will be

should take appropriate measures to overcome these defects before entering the Gulf of Gdańsk.

### 2.3 Ship reporting system

The Government of Poland proposes to approve a mandatory ship reporting system covering the territorial and internal waters of Poland in the Gulf of Gdańsk, south of parallel 54°45'N. The information requested from ships will be limited to information essential to achieve the objectives of the ship reporting system, the sole purpose of which is to enhance the safety of the participating ships.

Area covered by the proposed ship reporting system is presented on Figure 3.

Ships of the following categories are required to participate in the system proceeding to or from Polish ports or passing through the reporting area between Polish ports in the Gulf of Gdańsk, or ships visiting the area:

- All passenger ships as defined in Chapter 1 of 1974 SOLAS, as amended;
- Ships of 150 gross tonnage and above; and
- All vessels engaged in towing.

Reports should be made using VHF voice transmissions. A ship may elect, for reasons of commercial confidentiality, to communicate, in compliance with the relevant national regulations, that section of the report, which provides information on cargo by non-verbal means prior to entering the ship reporting area.

Designators to be used in the GDANREP area are derived from the format-type given in paragraph 2 of the appendix to Resolution A.851 (20). System identifier is: GDANREP (SP)(PR)(FR).

Additionally when a incident or accident which can affect the safety of the ship, safety of navigation

Centre “Gulf of Gdańsk”. The authority monitors shipping within the mandatory ship reporting area of the Gulf of Gdańsk by radars and AIS. This does not relieve shipmasters of their responsibility for the navigation of their ship.

The voice call sign of the VTS Centre “Gulf of Gdańsk” is “VTS Zatoka”. The VHF working channels of the VTS Centre “Gulf of Gdańsk” are:

- Primary channel - 71 - call and short report information;
- Reserve channel - 66 - as designated by VTS; and
- Other channel - 16 - call and distress

Confidential information may be transmitted by other means, including electronically, in compliance with relevant national regulations.

On receipt of a position message, the system operators will establish the relationship between the

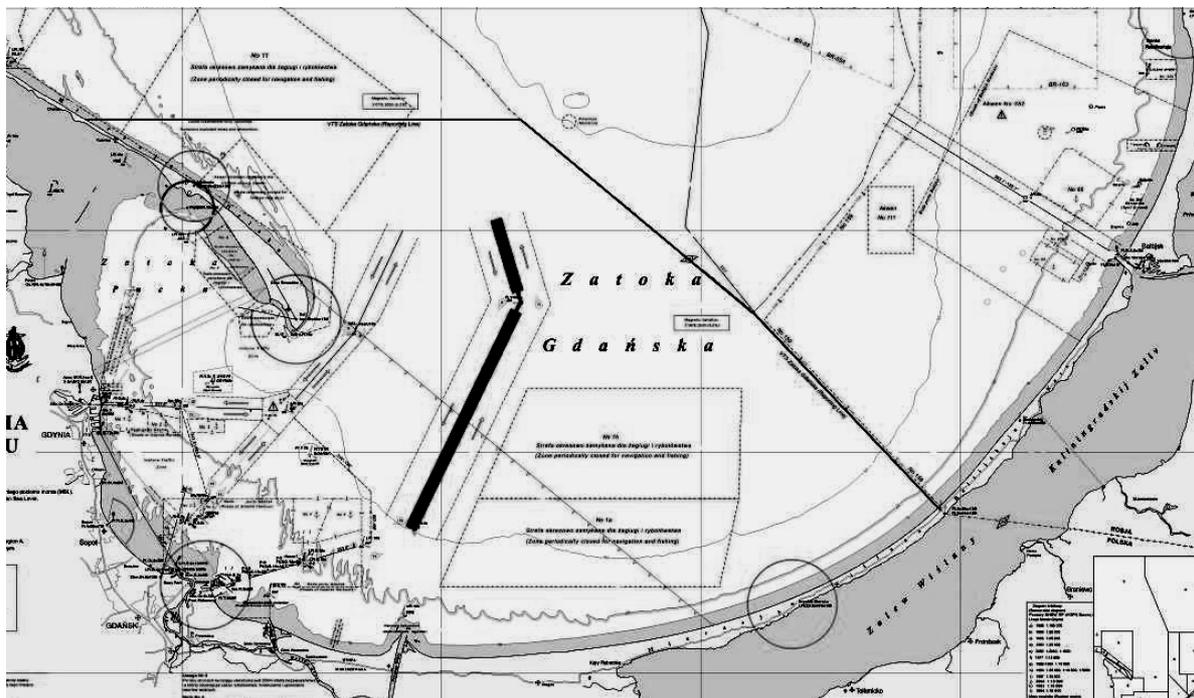


Fig. 3. Area covered by the proposed mandatory ship reporting system in the Polish waters in the Gulf of Gdańsk

or any incident giving rise to pollution, or threat of pollution, to the marine environment occurs within the ship reporting system area, the vessel(s) shall immediately report to the shore-based authority the type, time, and location of the incident, extent of damage or pollution, and whether assistance is needed. The vessel(s) shall provide without delay any additional information related to the incident or accident as requested by the shore-based authority, given, when appropriate, in the format-type of detailed report as given in paragraph 3 of the appendix to Resolution A.851 (20).

The shore-based authority is Director of Maritime Office in Gdynia, Poland. The ships participating in the system shall transmit reports by radio to VTS

ship's position and the information supplied by the position-fixing equipment available to them. Information on course and speed will help operators to identify one ship among a group of ships. All VHF-, telephone-, radar-, AIS- and other relevant information are recorded and the records are stored for 30 days.

If a ship participating in the mandatory ship reporting system fails to appear on the radar screen or fails to communicate with the authority or an emergency is reported, MRCC in the area is responsible for initiating a search for the ship in accordance with the rules laid down for the search and rescue service, including the involvement of

other participating ships known to be in that particular area.

#### 2.4 *Information to be provided to vessels participating in ship reporting system*

Authority provides information to shipping about specific and urgent situations, which could cause conflicting traffic movements, and other information concerning safety of navigation, for instance:

- Information on weather conditions, ice, water level;
- Information on navigational conditions including navigational warnings (status of aids to navigation, presence of other ships and, if necessary, their position, etc.); and
- Recommended route to be followed and status of areas temporarily closed for navigation.

Information is broadcasted by VTS Centre "Gulf of Gdańsk" station on the working channel or on the reserve channel, following the announcement on the working channel in the form of routine bulletins or when necessary or on request. Scheduled times of the routine weather bulletins and navigational warnings broadcasts are available in the relevant nautical publications. Participating ships shall maintain listening watch on the designated VTS working channel.

Information broadcasts will be preceded by an announcement on VHF channel 16 on which channel it will be made. All ships navigating in the area should listen to the announced broadcast. If necessary, individual information can be provided to a ship on the working channel, particularly in relation to positioning and navigational assistance or local conditions. If a ship needs to anchor due to breakdown or emergency the operator can recommend suitable anchorage in the area.

#### 2.5 *Conducted changes in the existing routing and ship reporting systems*

There were introduced following main changes into existing routing and ship reporting systems:

1. Were removed three recommended tracks:
  - 205°-025° for ships proceeding to or from traffic separation scheme (TSS) "WEST";
  - 163°-343° for ships proceeding to or from TSS "EAST"; and
  - Between HEL and ZN buoys.
2. Was removed inshore traffic zone between Polish coast and recommended track between GN and NP buoys.
3. Was cancelled reporting point in the crossing position of recommended tracks for ships proceeding to and from TSS "EAST" and TSS "WEST".

4. Was introduced precautionary area with recommended direction of traffic flow around buoy GN.
5. Was introduced traffic separation line connecting two parts of the traffic separation zone in the TSS "EAST".
6. Was changed inshore traffic zone between Polish coast and TSS "WEST".
7. Was changed part of positions defining boundaries of the TSS "EAST" and TSS "WEST" and reporting points.
8. Was changed recommended track between buoy GN and Gdańsk Northern Port (Port Północny).
9. Were prepared new navigational instruction and information about reporting system and available services.

### 3 CONCLUSIONS

At 52<sup>nd</sup> session of the IMO Sub-Committee on Safety of Navigation, the Government of Poland submitted an information paper about planned new routeing measures in the southern part of the Baltic Sea (NAV 52//INF.5). Recalling this announcement the Government of Poland wants to submit, for consideration and approval by the Sub-Committee, the first set of measures concerning existing routeing system and ship reporting system in the Polish waters in the Gulf of Gdańsk. Proposals presented in this paper have been sent for consideration to all Baltic countries including Russian Federation at the end of March 2007. After receiving their consent to the described routing measures and mandatory ship reporting system they will be sent to IMO for approval during nearest session of the above-mentioned Sub-Committee on Safety of Navigation.

### REFERENCES

- IMO NAV 52/INF/5, 2006. Information about planned new routeing measures in the southern part of the Baltic Sea. Submitted by Poland, International Maritime Organization, London, 12 May.
- IMO NAV 51/3/6, 2005. Routeing of ships, ship reporting and related matters, New traffic separation schemes in Bornholmsgat and North of Rügen, recommended deep-water route in the eastern Baltic sea, amendments to the traffic separation schemes Off Gotland Island and South of Gedser and new areas to be avoided at Hoburgs Bank and Norra Midsjöbanken. Submitted by Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland and Sweden, International Maritime Organization, London, 3 March.