

A scheme for traffic separation at the Izmit Bay

İzmit Körfezinde gemi trafik ayırım düzeni

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Abstract

The vessel traffic is heavy in the Izmit Bay which forms a water passage between the Marmara Sea and the important industrial areas of Sakarya. An investigation was carried out whether a scheme for traffic separation, such as in the Turkish Straits and in the Marmara Sea, is necessary for the Izmit Bay.

Key words: Traffic separation scheme, Marmara Sea, Turkish straits

Introduction

At maritime transportation, narrow straits, water passages and bays are the regions where the collision risk is maximum. If the width is navigable only for two vessels the thalweg line arranges the vessel traffic of different directions. For instance, in the past the left traffic order was valid, later it was changed to the right traffic system (Ozman, 1984). Subsequently, with the regulations published in the Official Gazette (Annon., 1994a) the traffic

separation scheme at the Marmara Sea and in the Straits was established to be valid from July 1st, 1994 onwards. According to the traffic separation scheme, vessels take their own routes (Oğuzülgen, 1995).

The "General Provisions on Ships Routing" which was published by the International Maritime Organization (IMO) of the United Nations Organization determines how the traffic separation scheme should be prepared and should be applied. The Vessel Traffic Separation Scheme is also a part of the Vessel Traffic System (VTS) (Ertan, 1997).

Traffic separation scheme in the region of Turkish Straits

According to the Article 3 of the regulations prepared according to the ships routing document approved by the 63rd Maritime Safety Committee (MSC 63) of IMO, the Traffic Separation Scheme came into force on July 1st, 1994 and was established in the Turkish Straits System (north approaches of the Strait of Istanbul, the Strait of Istanbul, the Marmara Sea, the Strait of Çanakkale and the southwest approaches of the Strait of Çanakkale) (Annon., 1994b). However, this traffic separation scheme does not cover the İzmit Bay, which is a very important industrial region.

The establishment of the traffic separation scheme at İzmit Bay

The İzmit Bay and its surroundings is the vital point for the Turkish industry. Besides many industrial establishments, the biggest refinery of the country (TUPRAŞ) and the most important establishments of petrochemical industry are placed in this region. The biggest industrial group of iron and steel of the Turkish private sector is also located in the area. On the other hand, the Derince Port is one of the biggest trading gates for import and export. In recent years, the increase in privatisation policy of the government encouraged the private sector to establish port complexes in this region. There are numerous examples in the region of Dilovası. The biggest naval base and military shipyard of Turkey is also sited in Gölcük, at the easternmost basin of the İzmit Bay.

As it is seen, the İzmit Bay has undertaken the duty to provide incoming raw material for the industry at the first place, and has been an important gate for the import and export activities. It

creates shipping of a wide range, and besides, a maritime traffic which can cause risk for the vessels.

When the bridge of which the feasibility study continues within the extent of "Istanbul-Bursa Highway Project" is realised, it is expected that the existing ferryboat lines between Topçular and Eskihişar will continue thus still affecting the maritime traffic of the bay adversely and bring the risk together.

In 1996, the number of vessels passing through the İzmit Bay was 6483 throughout the year. More descriptively, 2920 ships (2471 Turkish, 449 foreign) were carrying petroleum or its production as freight. Their share in the total is 45,04 %. On the other hand 3232 vessels are cargo ships (1507 Turkish, 1725 foreign) and their share in the total was 49,85 %. Beside these oil carriers and cargo vessels, 113 other vessels (1,74 %) also used the Bay (personal communication with the Under Secretariat for Maritime Affairs).

Considering the casualties in this region, there were two fatal accidents in the year 1996; a water tanker (Sen Melek) sank and a tanker (Körfez) burnt.

However, a collision of two vessels – especially if one of them is an oil carrier or a naval vessel equipped with ammunition – may turn the İzmit Bay into a hell immediately. The consequences of such an accident will also be an environmental disaster, and due to such a fire, there will be serious economical losses. In addition, other vessels will also be damaged, even unable to move. From the ecological point of view, it will last at least 100 years to recover the possible ecological damage.

In February 1997, a tanker fire in Tuzla, where the shipyards of the private sector are sited, is an example of such a disaster. This event showed the dimensions of such a disaster and also the difficulties of the firemen encountered there (personal communication with the Under Secretariat for Maritime Affairs).

From the meteorological point of view, winter and spring are the rainy seasons. The annual snowfall is about 7-8 days in total. The stormy days show annual changes and ranges from 2 to 11 days. Hazy days also ranges from 6 to 18 days. Therefore the sight is not clear for about 21 days in a year (personal communication with the State Meteorological Office).

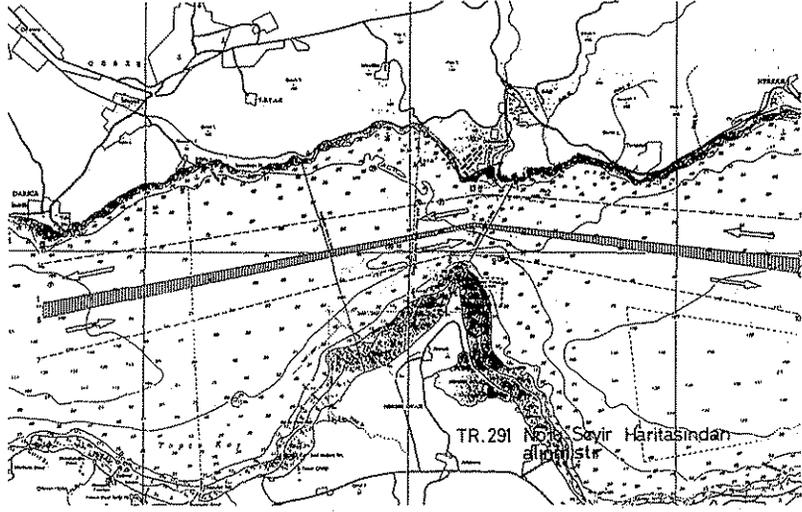


Figure 1. Proposed Vessel Traffic Separation scheme in front of the Hersek Delta (plain) which forms the narrowest passage in the İzmit Bay.

Results

We realise that, in order to solve the above-mentioned problems, it is necessary to establish a scheme for vessel traffic separation for the region beginning from Yelkenkaya-Yalova up to Hereke, including the Dilburnu-Dilovası region (1.3 nautical mile long), which is the narrowest part of the bay in front of the Hersek Delta (Figure 1 and Table 1). The details of this scheme may be similar to those in ships routing document of IMO (Annon., 1994b). The geographical, hydrographic and oceanographic characteristics of the İzmit Bay are suitable for establishing such a traffic separation scheme. When releasing such a traffic separation scheme a detailed discussion with the related expert organisations is an indispensable necessity.

Özet

Bu çalışmada, Türk Boğazları ve Marmara Denizinde tesis edilmiş bulunan Trafik Ayırım Düzenlerinin (TSSs) ışığı altında, İzmit Körfezindeki yoğun ve tehlikeli gemi trafiği göz önüne alınarak, mevcut rotalama sistemleri tartışılıp, Körfezde bir Trafik Ayırım Düzeni (TSS) uygulamasına geçilmesinin uygun olduğu vurgulanmıştır.

Table 1. Traffic Separation Scheme in the İzmit Bay.

Latitude	Longitude
<i>For E-W Directed Traffic Line</i>	
1. 40 44'.25 N	29 23'.05 E
2. 40 45'.44 N	29 31'.15 E
3. 40 44'.92 N	29 37'.25 E
4. 40 44'.73 N	29 37'.25 E
5. 40 45'.38 N	29 31'.15 E
6. 40 44'.05 N	29 23'.05 E
<i>For E-Directed Traffic Line</i>	
4. 40 44'.73 N	29 37'.25 E
5. 40 45'.38 N	29 31'.15 E
6. 40 44'.05 N	29 23'.05 E
7. 40 43'.45 N	29 23'.05 E
8. 40 44'.95 N	29 30'.75 E
9. 40 44'.95 N	29 31'.60 E
10. 40 44'.16 N	29 37'.25 E
<i>For W-Directed Traffic Line</i>	
1. 40 44'.25 N	29 23'.05 E
2. 40 45'.44 N	29 31'.15 E
3. 40 44'.92 N	29 37'.25 E
11. 40 45'.52 N	29 37'.25 E
12. 40 45'.82 N	29 32'.55 E
13. 40 45'.82 N	29 31'.20 E
14. 40 44'.78 N	29 23'.05 E

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