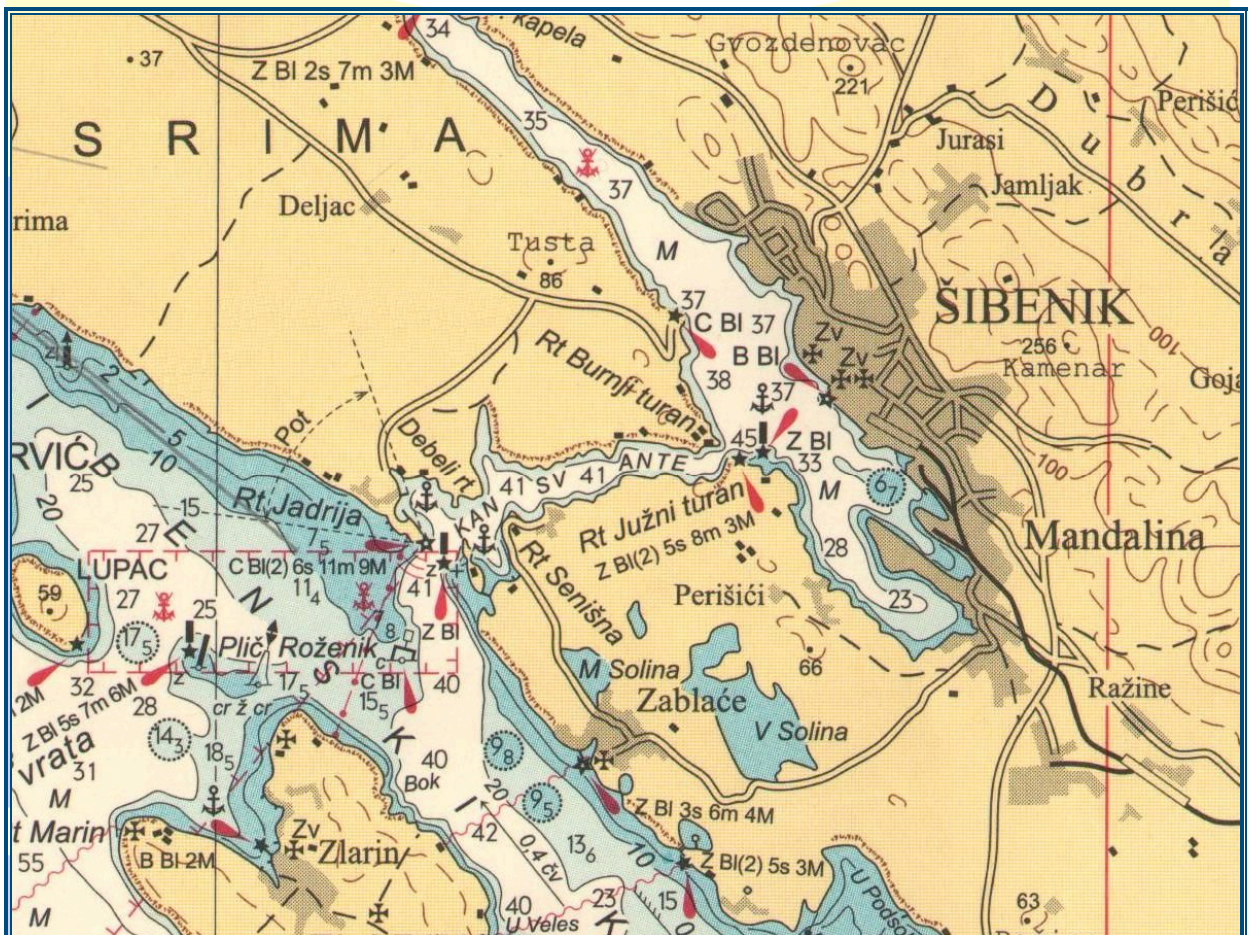


SYSTEM FOR CONTROL AND MANAGEMENT OF NAVIGATION THROUGH THE CHANNEL OF SVETI ANTE

CHANNEL OF SVETI ANTE

The Channel of Sveti Ante is the only entrance into the central Dalmatian town of Šibenik and its international port. Because of its position, its length of 2800 m which does not extend straightly, it is necessary to often change course in short time intervals. In some places the channel is only 150 m wide and because of sea currents and periodical strong winds it is very difficult for navigation. Moreover, it could be very dangerous if two ships over 50 GT pass by. For that reason the system for control and management of the channel has been introduced.

Traffic in the channel is regulated by a special Decree about the navigation through the passage into the port of Šibenik (Official Gazette No. 9/07).



Picture No. 1: Channel of Sveti Ante

CONTROL AND MANAGEMENT OF THE NAVIGATION THROUGH THE CHANNEL OF SVETI ANTE

The control and management through the Channel of Sveti Ante is carried out from Control and Management Centre, situated in the Signal Station of Jadrija. It is done by means of radio link and automatic device, using the computer and control desk to manage the semaphore lights located on Signal Stations on both entrances into the channel.

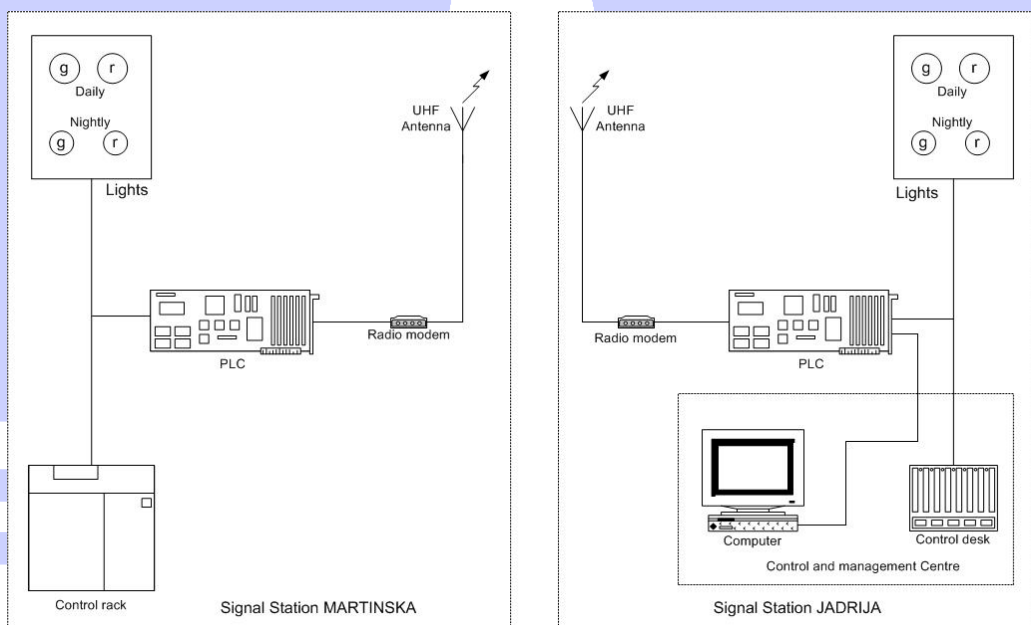
After the call directed to the operator in Centre by means of VHF radio station from the vessel which asks for the permission to pass the channel, the channel opens from one side (green light on), while the other side of the channel remains closed (red light on).

The red light indicates that the passage is closed for all vessels over 50 GT, while the green light indicates that the passage is open for all vessels over 50 GT.

During the navigation through the channel, safety of navigation is guaranteed by the existing aids to navigation.

SYSTEM FOR CONTROL AND MANAGEMENT OF THE NAVIGATION THROUGH THE CHANNEL OF SVETI ANTE

The System for control and management of the navigation through the Channel of Sveti Ante includes the Control and Management Centre and two Signal Stations with semaphore lights located on both entrances into the channel. The link between the Centre and Signal Stations with semaphore lights is carried out by wire and/or UHF radio modem.



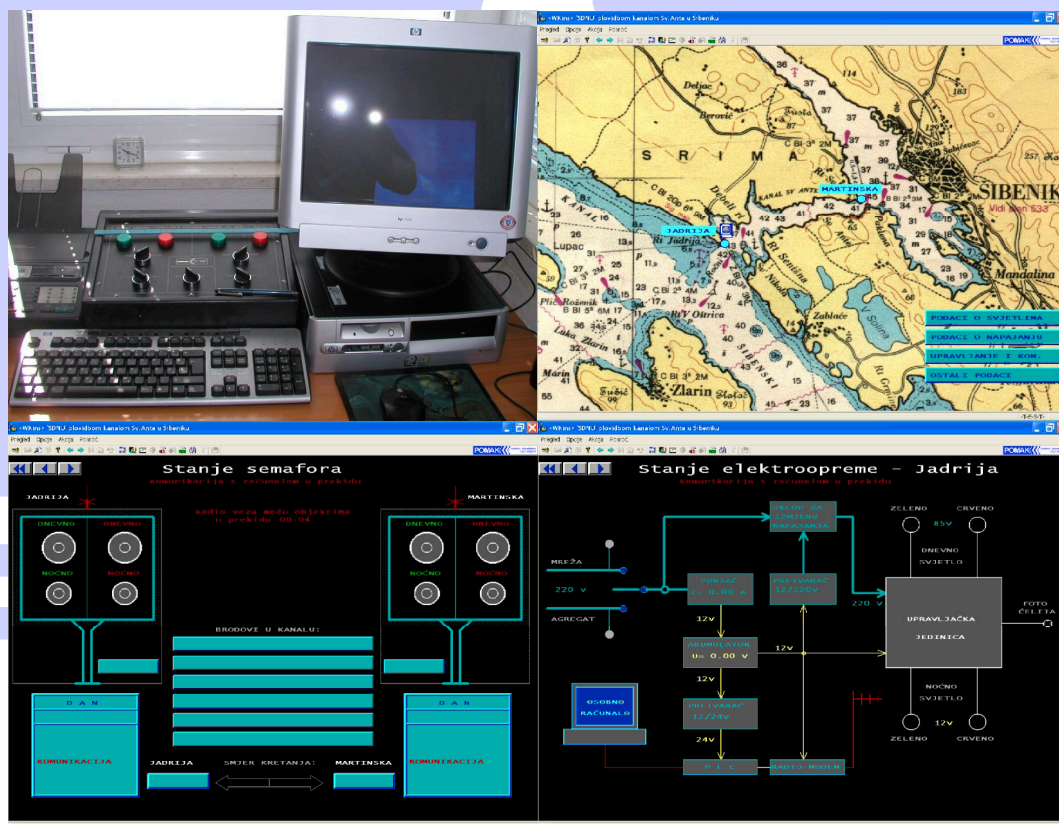
Picture No. 2: *The System for control and management of the navigation through the Channel of Sveti Ante*

CONTROL AND MANAGEMENT CENTRE

Control and management Centre is located within the Signal Station of Jadrija. It is equipped with a computer and a control desk which serves to control and manage the navigation through the channel 24 hours a day. It is connected with semaphore lights by wire and/or UHF radio modem.

Apart from the possibility to manage the semaphore lights on both sides of the channel (lights on and off), the operator has all the time the following data on the monitor:

- state of the lights on both sides of the channel (red or green, daily or nightly light, correct functioning of single lights and lamps);
- previous and existing states of alarm (time of beginning of alarm and type of alarm);
- vessels passing through the channel (vessel's name, nationality, GT, time of entrance into and exit out of the channel, bearing)
- state of managing and communication devices (correct functioning of radio modem and automatic device);
- power supply (main and reserve);
- state of power supply devices (correct functioning of charger, convertor 12/24 V, convertor 12/220 V, device for switching from main to reserve power supply, battery voltage and charging voltage);
- safety state of the aid (OK or broken in);
- other data (failures, repairs and exchange of single devices).



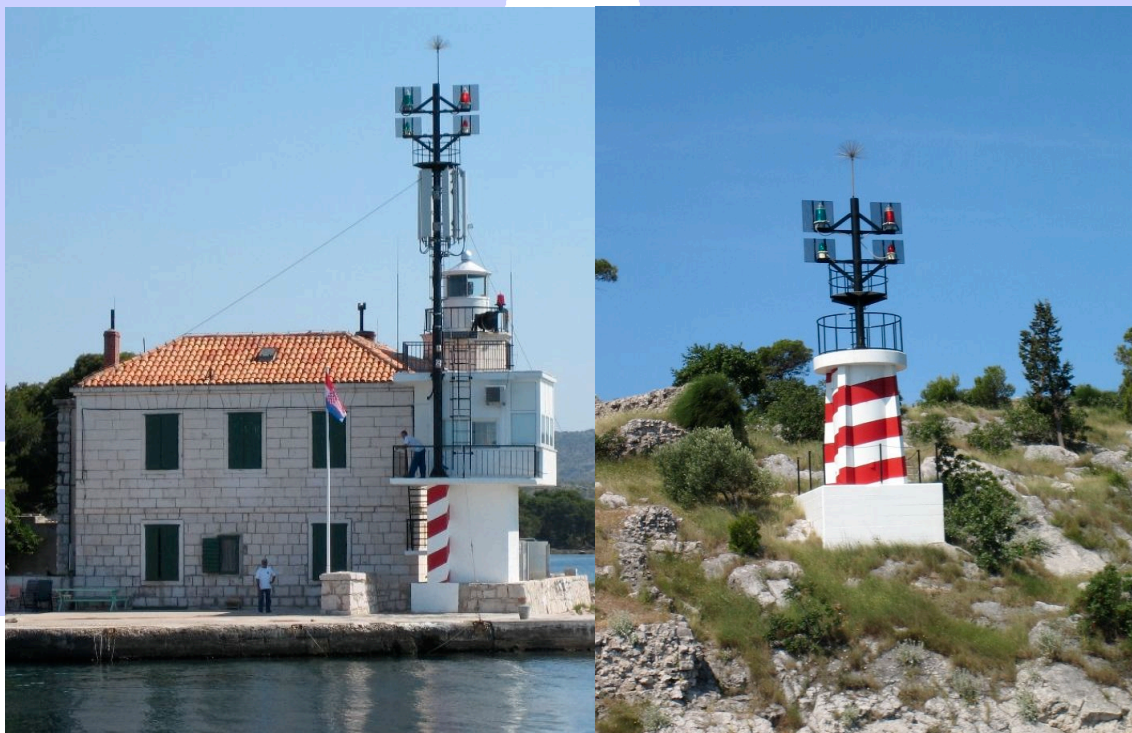
Picture No. 3: The System for control and management of the navigation through the Channel of Sveti Ante (Computer, Control desk and computer program)

SEMAPHORE LIGHTS

Semaphore lights are located at the two entrances into the Channel of Sveti Ante, namely on the Signal Station of Jadrija (coming from the open sea) and on the Signal Station of Martinska (exit into the port of Šibenik). These lights are visible for ships approaching to the channel from both sides, having such a sector of visibility that after entering the channel lights cannot be seen any more. The range of semaphore lights is 1 NM and the coverage angle 180°. The lights have duplicated power supplies, primary from public electricity network and secondary from batteries, or diesel generator which is manually set on if the electricity from public network is missing more than one day. Semaphore light at the location of Jadrija is linked with Control and Management Centre by wire link, while the light at the location of Martinska is linked with the Centre by UHF radio modem.

The characteristics of these semaphore lights are as follows:

- the lights are located on the height of 12 m (Martinska) and 14 m above the sea level (Jadrija);
- the lights are installed on pillars, two on each side, one beneath the other;
- the lights are semaphore type, combination of red and green, with constant light;
- daily lights are located above night lights;
- there are special lights for the regime of day and night functioning;
- for daily light plastic lenses diameter 250 mm are used, as well as reflecting surfaces and 70 W metal-halogen lamps, while for night light plastic lenses diameter 150 mm and double filament 10 W lamp is used.



Picture No. 4: *The System for control and management of the navigation through the Channel of Sveti Ante (Semaphore lights on Signal Stations Jadrija i Martinska)*