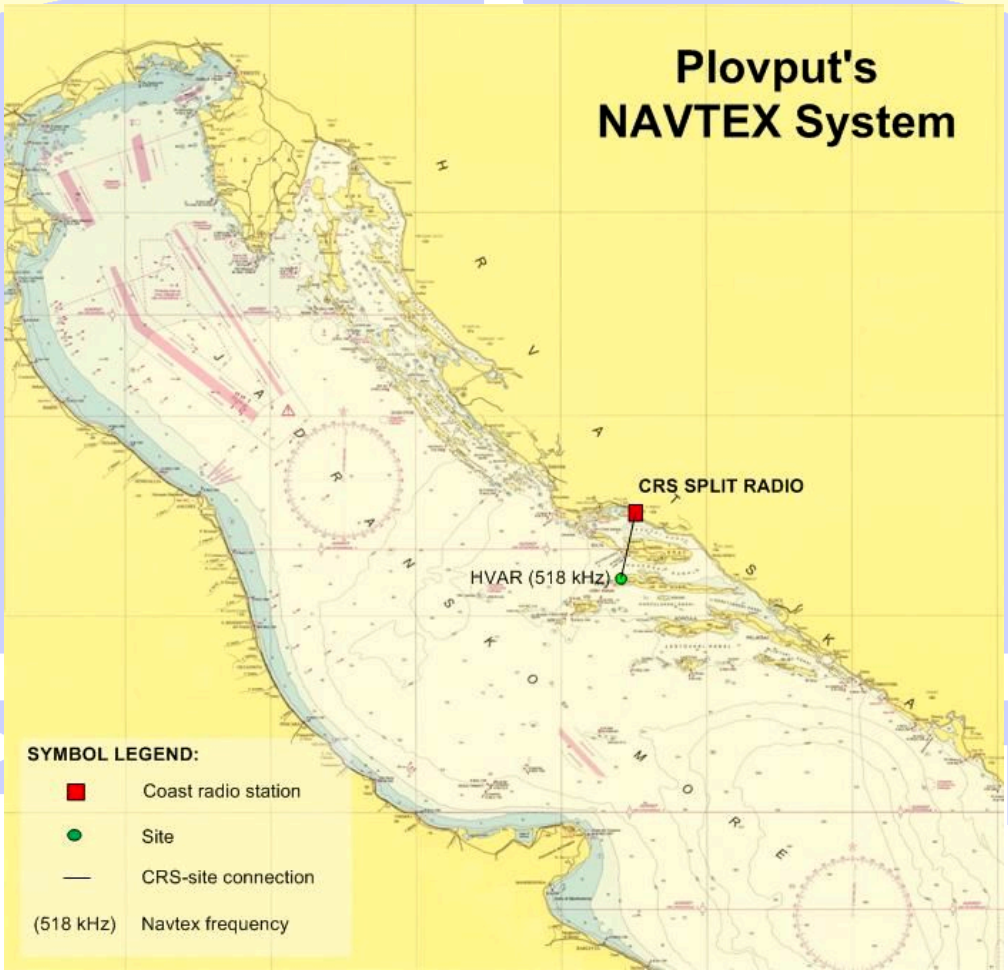
PLOVPUT'S NAVTEX SYSTEM

IN GENERAL ABOUT NAVTEX SYSTEM

NAVTEX (NAVigational TeleX) System is a part of Global Maritime Distress and Safety System (GMDSS) and serves for transmission of Maritime Safety Information (MSI) within the World-Wide Navigational Warning Service (WWNWS). Operating frequency on which information is transmitted is 518 kHz in FEC mode, namely in the forward error correction mode. Coast Radio Station has six regular Navtex broadcasts (in English) and, if necessary, transmits special messages, too.

PLOVPUT'S NAVTEX SYSTEM

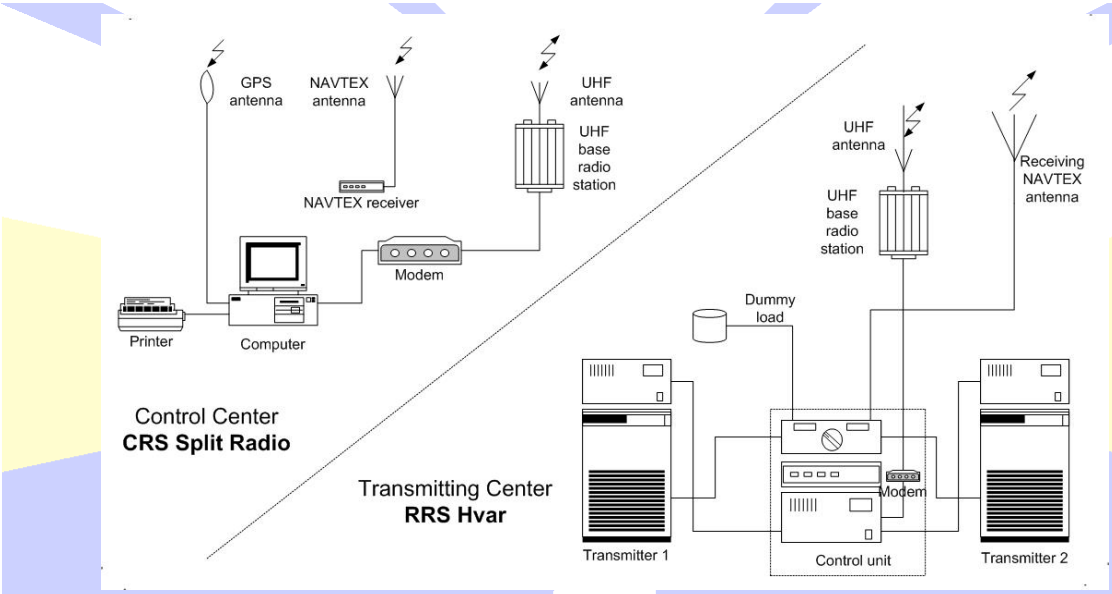
Navtex System of Plovput includes Control Center located in Coast Radio Station Split Radio and Transmitting Center located on R.R.S. Hvar which are mutually connected by means of UHF base radio stations.



Picture No 1: *Plovput's NAVTEX System*
(Coast Radio Station, belonging site and working frequency)

Coast Radio Station	Site	Working frequency
CRS SPLIT RADIO	R.R.S. Hvar	518 kHz

Table No. 1: *Plovput's NAVTEX System*
(Coast Radio Station, belonging site and working frequency)



Picture No 2: *Plovput's NAVTEX System*
(equipment on Coast Radio Station, site and type of connection)

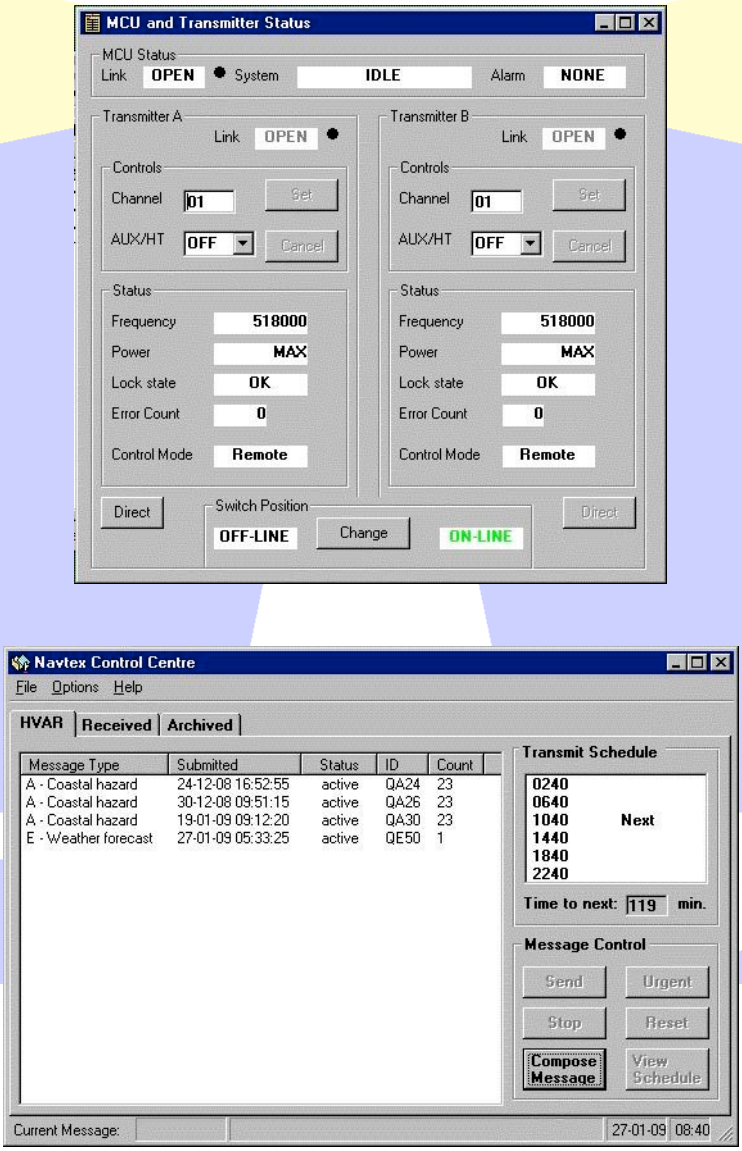
CONTROL CENTER

The equipment of NAVTEX System in Coast Radio Station includes:
- control computer with monitor, keyboard and mouse;
- GPS antenna;
- Navtex receiver;
- modem;
- printer;
- two UHF base radio stations (“cold backup”);
- antenna system – common for both UHF radio stations.

Basic functions of NAVTEX System in the Control Center are:
- composing and submitting of Navtex messages towards the Transmitting Center;
- printing of prepared Navtex messages on the printer;
- checking of transmitted Navtex messages by means of Navtex receiver;
- continuous control of functioning of all parts of the System, including the communication between Control Center and Transmitting Center, and automatic reporting of a System’s failure;
- control of functioning of transmitters in the Transmitting Center;
- adjustment of System’s time by means of GPS system.

On operators' computer there is a continuous presentation of:
- review of Navtex messages in the Transmitting Center which are ready for broadcasting;
- information about the time of the next Navtex transmission;
- information about the state of MF transmitters;
- information about the state of communication between Control Center and Transmitting Center.

Computer program on operators' computers has the following possibilities:
- composing of new Navtex messages and their submittion to the Transmitting Center;
- review of active and archived Navtex messages;
- receiving of Navtex messages in order to control them;
- automatic reporting of System's failure or of communication's failure between Control Center and Transmitting Center;
- possibility of manual choosing of transmitters A and B;
- review of all activities within the NAVTEX System.



Picture No 3: *NAVTEX System – main screen of a NAVTEX computer program (state of transmitters and communication; review of messages and time of transmission)*

All NAVTEX equipment is connected to unterupted power supply (UPS). In case of a longer interruption of electric energy the supply is switched to a diesel generator. It is used the same diesel generator as for VHF System and VHF DSC System.

TRANSMITTING CENTER

The equipment of NAVTEX System in the Transmitting Center includes:
- control rack with computer, modem, interfaces towards transmitters and UHF radio stations, communication, control and network modules and cards and power supply;
- two NAVTEX transmitters;
- two UHF radio stations (“cold backup”);
- antenna system for MF transmitters which is connected with short-wave antenna for the transmission of Croatian radio program by diplexer;
- antenna system – common for both UHF radio stations.

Basic functions of NAVTEX System in the Transmitting Center are:
- storing of Navtex messages submitted from the Control Center;
- preparation of Navtex transmitter for functioning and transmission of Navtex messages in defined time in the way that transmitters A and B are used alternately;
- redundancy of Navtex transmitters namely independent work of transmitters when in case of a failure on one transmitter transmission of Navtex messages is automatically switched to another transmitter.

COMMUNICATION BETWEEN CONTROL CENTER AND TRANSMITTING CENTER

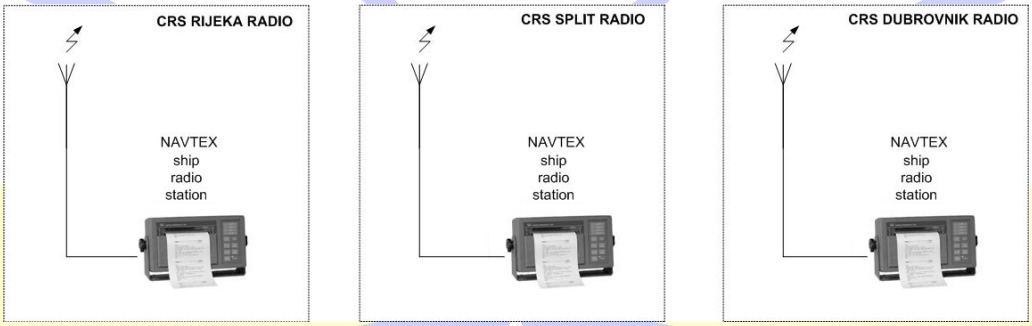
The Control Center of NAVTEX System located in the Coast Radio Station is connected with the Transmitting Center by means of UHF radio stations. In case of a failure of UHF radio station in the Centers, the communication is manually switched to another pair of UHF radio stations. Communication procedure used for data transmission is TCP/IP with fixed IP addresses.

CECKING OF THE FUNCTIONING OF PLOVPUT’S NAVTEX SYSTEM

With regard to complexity of NAVTEX System, it has no backup. However, in order to check correct functioning of NAVTEX System, Coast Radio Stations are equipped with ship Navtex receiver by which they can receive and check transmitted Navtex messages.

Coast Radio Station	Site	Working frequency
CRS RIJEKA RADIO	C.R.S Mlaka	518 kHz
CRS SPLIT RADIO	C.R.S Zenta	518 kHz
CRS DUBROVNIK RADIO	C.R.S. Gorica Sv. Vlaha	518 kHz

Table No. 2: *Checking of the functioning of Plovput's NAVTEX System (Coast Radio Stations, belonging sites and working frequency)*



Picture No. 4: *Checking of the functioning of Plovput's NAVTEX System (Coast Radio Stations and Navtex receivers)*