20 Questions and answers about Navtex

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1. Navtex: What it is ?

Navtex is short form for Navigation telex and as the name suggests, it is a one form of communication mode. Only thing is that it is for one way communication. What we have on board is a telex receiver, which receives navigational warnings sent by the Navtex station.

Navtex was developed to provide low cost, simple and automated maritime safety information to the ships in coastal waters.

Navtex is part of GMDSS equipments which is required to be fitted onboard every ship as per SOLAS Chapter IV Reg 7.

2. What is the source of Navtex messages ?

Navtex station receives these messages from navtex coordinator who in turn receives these messages from various sources. These sources include Meteorological office, Hyrdographic office or rescue coordination centers (RCC).

3. What is the difference between service area and range of the navtex ?

A navtex station have a pre-defined area for which it is responsible for sending information. This is called service area of navtex station. The Navtex coordinator of the country decides the service area for the navtex station when it is being set up initially.

If it does not overlap the service area of a navtex station of another adjoining country, usually there is no issue for the navtex coordinator to set up service area.

But if case any dispute over setting up the service area for a navtex station, IMO navtex coordination panel helps in setting this up.

The range of transmitter of the navtex station need to be sufficient to cover its service area. In fact it need to be more than the service area of the navtex station. This way the ship's proceeding from outside the service area can receive the navtex messages before entering the service area.

4. Do all navtex stations have equal range ?

As I said the range of the transmitter of the navtex station need to be sufficient to cover its service area. Each navtex station can have different size of the service area and hence the range of the transmitter of each of the navtex station will be different.

5. How can we know the transmitter range of a navtex station ?

This information is available in the ALRS Vol 3 or ADRS 1,3,4,5.

For example let us find the transmitter range of "Chennai" navtex station.

Open ADRS 1,3,4,5 on the dedicated computer and select "Navtex" under "View" option. From the left menu (Geographical area) scroll down to India. Under navtex option, click on Chennai. This will open a pop up showing the information about Chennai navtex station.

You will see that Chennai navtex station has a range of 250 NM.

6. How to know which navtex station will be in range on my passage ?

Same like above, We can find this information in the ALRS or ADRS 1,3,4,5. Just open ADRS Vol 1,3,4,5 on your dedicated computer and make sure Navtex is selected from "View" option.

This will give you all the navtex stations which you can zoom the map to view a particular one you might be looking for.

Otherwise you can choose the area (or country) from the geographical area selection panel from left menu bar.

You can then see which all navtex station you can expect in your passage.

7. At what time a navtex station transmits the navtex messages

Like our phones, Navtex also cannot receive two transmissions at the same time. While receiving transmission from one station, the navtex will reject the reception of second transmission if received.

For this reason, each Navtex station is alloted fixed time to transmit their messages. Each Navtex station type (Character B1) get fixed 10 minutes of time to transmit the message.

The time schedule is as follows

Transmitter identification character (B_1)	Transmission start times (UTC)					
A	0000	0400	0800	1200	1600	2000
B	0010	0410	0810	1210	1610	2010
C	0020	0420	0820	1220	1620	2020
D	0030	0430	0830	1230	1630	2030
E	0040	0440	0840	1240	1640	2040
F	0050	0450	0850	1250	1650	2050
G	0100	0500	0900	1300	1700	2100
H	0110	0510	0910	1310	1710	2110
I	0120	0520	0920	1320	1720	2120
J	0130	0530	0930	1330	1730	2130
K	0140	0540	0940	1340	1740	2140
L	0150	0550	0950	1350	1750	2150
M	0200	0600	1000	1400	1800	2200
N	0210	0610	1010	1410	1810	2210
O	0220	0620	1020	1420	1820	2220
P	0230	0630	1030	1430	1830	2230
Q	0240	0640	1040	1440	1840	2240
R	0250	0650	1050	1450	1850	2250
S	0300	0700	1100	1500	1900	2300
T	0310	0710	1110	1510	1910	2310
U	0320	0720	1120	1520	1920	2320
V	0330	0730	1130	1530	1930	2330
W	0340	0740	1140	1540	1940	2340
X	0350	0750	1150	1550	1950	2350

8. Can Navtex station send a message outside these timings

Yes, they can if the message is of utmost priority. There are three message priorities that a navtex message can have. Vital, Important and routine.

Vital messages will be broadcasted immediately and do not need to wait for the scheduled transmission.

9. Do Navtex station repeat all the messages in each transmission

Navtex station repeats all the valid messages in each transmission provided it can be transmitted in allotted 10 minutes time.

The navtex receiver onboard stores the successfully received messages for 72 hours. In next transmission, if vessel is still in the range, it will only receive and print any new messages.

Now let us say that you received the navtex messages just now. And you wish to receive all the messages again in next scheduled transmission of the station.

You can switch off the navtex receiver and then switch on again. This will clear the memory from the Navtex and you will receive all the valid messages again.

10. What if I have received few corrupted message

As I pointed out in previous question, we can switch off and switch on the navtex again. During next scheduled transmission, you will receive all the navtex messaged again.

But if you will be in the service area of the navtex before next transmission, you can send the email to the navtex co-ordinator about the corrupted message.

This way not only you will get the corrupted message by email but also you have given a feedback to the navtex station about the corrupt message.

11. How does navtex station sends navtex messages

The Navtex station sends these message on a designated frequency and we receive it on board if we are in range of that navtex station.

If you have a thing for numbers, then here are few numbers you may wish to know

Navtex uses frequency 518 KHz for transmitting messages in english.
Navtex uses another frequency 490 kHz for transmitting messages in local language.
The range of the navtex transmission is between 250NM to 400NM

12. What is the format of Navtex message

Every navtex message starts with letters ZCZC which indicates the start of the message. This is followed by two letters (we call it B1B2) and two numbers (B3B4). In the last, end of the message is denoted by "NNNN".

ZCZC : As I said it denotes the start of the message

B1 : First letter denotes the identity of the navtex station broadcasting this message. This can be anything from letter A to Letter X.

B2: The second letter denotes the message type.

B3B4 : The two numbers denotes the message number of the navtex message.

NNNN: indicates the "End of the message"

13. What does phasing signal means ?

This is the signal that is used to lock into the transmission of a particular navtex station. Now if this signal is not used what can happen.

If there is another station in range and which also sends its transmission, the message will be corrupted. This is because navtex receivers will try to receive messages from both the stations.

When a particular station is locked in with the phasing signal, navtex receiver will block reception of all other stations.

14. What are the type of messages received through Navtex

As I said earlier character B2 in navtex message identity represent the type of navtex message. A letter from A to Z denotes the message type. For example letter A means the message type is "Navigational warning" and letter B mean the message type is "Meteorological warning”.

B_2 Subject Indicator Character		
1 letter		
A	=	Navigational warnings
B	=	Meteorological warnings
C	=	Ice reports
D[12]	=	Search and rescue information, acts of piracy warnings, tsunamis and other natural phenomena
E	=	Meteorological forecasts
F	=	Pilot and VTS service messages
G	=	AIS service messages (non navigational aid)
H	=	LORAN messages
I	=	currently not used
J	=	GNSS messages
K	=	Other electronic navigational aid system messages
L	=	Other Navigational warnings – additional to B_2 character A[13]
M N O P Q R S T U	= = = = = = = = =	currently not used
V W X Y	= = = =	Special services allocation by the IMO NAVTEX Co-ordinating Panel
Z	=	No messages on hand

15. How do we know what type of messages will a Navtex station send in each transmission schedule

We can find this information in ALRS or ADRS 1,3,4,5. For example if we see look for Mumbai Navtex station, you can find its transmission schedule as well as what type of messages will it send during each transmission.

16. How the message number (B3B4) allotted to a Navtex message ?

The message numbers are given between 01 to 99. When a navtex station is first set up and it sends its first message, it will be numbered as 01.

After that the message number count will keep on increasing until it reaches message number 99. Now when the message number reaches 99, there can be 2 possibilities

There can be few messages (from 01~99) that are canceled or

All the messages are valid
If there are some messages that are cancelled, the next message after 99 will get the message number of first cancelled message after 01. This cycle goes on.

Let us understand this with an example.

A Navtex station (B1=P) has sent total 97 message since it was put into service few day back. In these 97 messages, message number 03, 11 and 16 are cancelled. Its next scheduled transmission is after 3 hours and it got 3 new Nav warnings (B2=A) to send. What will be the message identification of these 3 messages.

Think.

You Got it. right ?

PA98, PA99, PA03. I hope you have same answers.

Now let us see the second condition. In case all the 99 Navtex messages are valid. In this case the navtex station will use the message type "L" for issuing new nav warnings through Navtex.

17. Do Navtex stations send the in force warning list ?

IMO encourages Navtex stations to send the in-force list every week. But most of the times you would not receive the in-force list.

Navtex stations have limited time (10 minutes) to transmit the messages. Including in-force list will only reduce the time for actual transmission.

Though I have experienced that Japan Navtex stations send in-force list every week.

We can download the in-force warnings from the internet (Official sites of the navtex stations) but

This is highly discouraged by IMO as well as industry experts like Oil majors. Not all nav area coordinators have the in force list for navtex posted on the web
Even if navtex stations send the in-force list every week, not all ocean going ships will receive it. Ship will pass the service area of the station in less than one day. So if the ship passes this area on the day other than the day in-force list is sent, they will not receive it.

18. How do I know if I have received all the navtex warnings ?

We cannot know for sure if we have received all the Navtex warnings. We have to assume that we have all the Navtex warnings.

But the best we can do is to keep the Navtex receiver in good condition so that it does not miss out receiving any navtex messages.

Also we should select the correct station well before entry into the service area. It is a good practice to select all the station that would be in our range during the passage, before we begin the passage.

Apart from following the Maker's guidelines for maintenance, cleaning of navtex antenna can increase the reception quality.

19. Do we need to log the Navtex messages in the GMDSS log

As per SOLAS Chapter IV, reg 17 we need to maintain the radio records for all the important activities. But IMO has clarified this that we are not required to log receiving navtex messages in the GMDSS log. Maintaining the print out of the navtex messages is sufficient to satisfy the regulation 17 of the SOLAS chapter 17.

20. How to plot Navtex warnings on chart.

Plotting navtex warnings on chart is no different than plotting any other warnings. This guide on navigational warnings can be useful for information on how to plot navigational warnings on chart.
And the final question is from me to you. Do you have any other question that I may have missed. I would be happy to include that.

Conclusion

Naxtex is as important equipment as any other equipment on the wheel house. But sometimes we tend to give Navtex a step motherly treatment by keeing it last in priority list. One reason for that is we are never sure how to handle Navtex.

If we know how it works and how best we can handle Navtex on board, handling Navtex messages will be as easy as eating a pie of cake.