

Radiotelex

RADIOTLX	M/S ULYSSES	Monday 13/9/96 13:56
EDIT SHIP TELEX SUBSCRIBER - 'M/S MARY'		
F10 Return to edit TELEX subscriber	F1 Modify field	
<p>Call code 86901 Ship master frequencies . . 7 frq: 4.2-25.1 Mhz (Ship calls) Ship slave frequencies . . . 0.0 kHz (Master used when Radiotlx calls)</p> <p style="text-align: center;">Press F11 or Shift-F1 at any time to get help</p>		
F2 Save F3 Delete F5 Advanced F6 Procedures		
Text transmission allowed		

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1 Introduction

1.1 General information

Radiotelex system

Radiotelex is a communication system that handles the transmission and reception of telex messages over radio. Basically the system consists of the Radiotelex software and a Radiotelex module (modem). The Radiotelex software runs on a computer of one of the following types:

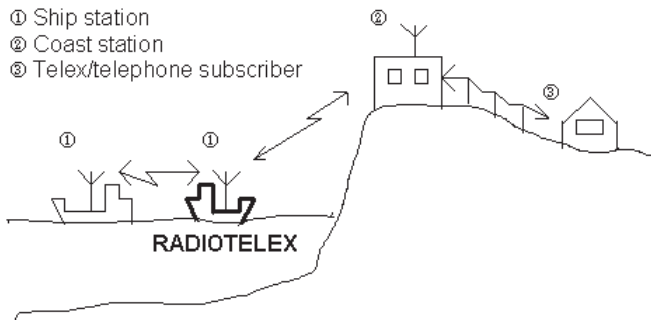
- a marine PC,
- a communication computer, or
- an ordinary PC not using *Windows*.

GMDSS

Radiotelex has been designed in accordance with relevant IMO, CCIR, and ETSI recommendations/specifications. It has been approved for shipboard installations to operate within the Global Maritime Distress and Safety System (GMDSS). The solid state disk of the computer is used for storing the system software as required by the GMDSS.

Communication concept

Radiotelex supports worldwide ship-to-ship, ship-to-shore, and shore-to-ship communication. Often a coast station acts as the relay between Radiotelex and an end receiver without any Radiotelex capabilities. Ship and coast stations have unique call codes; Radiotelex supports both 4- and 5-digit selcalls and 9-digit MMSI numbers.



1.2 Terminology

General telex terms

Master	The master is the calling station (not necessarily the transmitting station but the one that actually initiated the communication).
Slave	The slave is the called station (not necessarily the receiving station).
ISS	Information Sending Station: The station transmitting characters.
IRS	Information Receiving Station: The station receiving characters.
ARQ	Automatic Repetition reQuest. A telex mode where the ISS transmits three characters at a time. Between each three characters the IRS transmits one character telling the ISS to send three new characters or to repeat the last three. Only two stations can communicate when using ARQ. Other stations cannot read the communication.
FEC	Forward Error Correction. A telex mode where the ISS transmits three characters at a time and repeats them immediately. FEC telex is one-way communication; the transmitter of the receiver is not used at all.
FEC broadcast	A broadcast FEC transmission can be received by all stations. FEC broadcast is primarily used for coast station traffic lists and news and in distress situations.

FEC**selective**

A selective FEC transmission can only be received by one particular station, just like ARQ traffic. Not used very often, FEC selective may be useful if the ship is in port where it is not allowed to transmit. On its way into the port, the ship can call the coast station to inform them that all messages for the ship must now be sent in selective FEC. Thus reception is possible without using the transmitter.

Free signal

Coast stations often transmit a so-called free signal when a frequency is vacant. This enables Radiotelex to detect when a transmission can begin without interrupting on-going traffic between the coast station and another ship.

Radiotelex terms**Subscriber**

A ship or an office that is not a coast station.

Coast station

A radio station that sends out free signals or has the capability of being used as a link between a ship and a subscriber.

Procedure

A procedure specifies how Radiotelex has to communicate with a specific coast station in order to carry out a transmission, e.g. an unattended store-and-forward telex transmission of a message.

Station

A station is either a subscriber or a coast station.

Radio station

A coast station or a subscriber with a radio.

Ship

A subscriber with a radio.

Operation

Methods that can be used to get a message to the destination. Examples are store-forward telefax or direct telex.

Telex

In Radiotelex, TELEX means ARQ telex.

2 Operation

2.1 Introduction

Forms and fields

Radiotelex operates with two basic data entry concepts called forms and fields. As an example of a form, we shall look at the EDIT SHIP TELEX SUBSCRIBER form. To find this:

1. Switch on, and Radiotelex starts up automatically.
2. Press **F6 Subscriber**.
3. Select **New subscriber**.
4. Type in the subscriber name, e.g. 'M/S MARY'.
5. Select **F2 Ship telex**.

The EDIT SHIP TELEX SUBSCRIBER form appears:

RADIOTLX	M/S ULYSSES	Monday 13/9-96 13:56
EDIT SHIP TELEX SUBSCRIBER - 'M/S MARY'		
F10 Return to edit TELEX subscriber		F1 Modify field
Call code 86901 Ship master frequencies . . 7 frq: 4.2-25.1 Mhz (Ship calls) Ship slave frequencies . . . 0.0 kHz (Master used when Radiotlx calls)		
Press F11 or Shift-F1 at any time to get help		
F2 Save	F3 Delete	F5 Advanced
F6 Procedures		
Text transmission allowed		

A form consists of one of more fields. In the EDIT SHIP TELEX SUBSCRIBER form, there are three, each line being one field:

Call code 86901 Ship master frequencies . . 7 frq: 4.2-25.1 Mhz (Ship calls) Ship slave frequencies . . . 0.0 kHz (Master used when Radiotlx calls)

Function keys

Radiotelex uses function keys as a means of selection. Each form contains a number of function keys which may or may not be present in other forms. Below we shall have a look at the function keys in the EDIT SHIP TELEX SUBSCRIBER form shown above. Also, we shall see how some function keys always have the same function. Finally, a later chapter will show that the TELEX and FEC terminals have two sets of function keys – ‘standby’/not ‘standby’.

For now, let us once again turn to the EDIT SHIP TELEX SUBSCRIBER form, which contains the following function keys:

F10 Return to edit TELEX subscriber		F1 Modify field	
F2 Save	F3 Delete	F5 Advanced	F6 Procedures

Below the function of each key is described:

- F10** Returns to the previous screen.
- F1 Modify field** By pressing **F1**, a list of possible values for the current field will pop up. An appropriate value can then be selected from the list.
- F2 Save** Pressing this key saves the form. When pressing **F10** in a form which has been edited and whose values have changed, the radiotelex system asks if the changes should be saved.
- F3 Delete** Generally deletes the whole field if this contains the **F1 Modify** field function.

F5 Advanced and
F6 Procedures

These keys are found in some coast station and subscriber forms. Altering the values of **Advanced** and **Procedures** requires a password.

F7 Default

This function may be found in other forms. It inserts default values in the fields where such values are appropriate.

General functions

A few keys always have the same function(s):

F1

Selects in a list or menu, or modifies a field. In most cases, the **right arrow** key can be used instead of **F1**.

F10

Returns to the previous screen, or – from the TELEX and FEC terminals – exits Radiotelex. In most cases, the **left arrow** key can be used instead of **F10**.

Space bar

Corresponds to the **F1** and **right arrow** keys in selection lists (e.g. a list of messages).

Shift-F1 and
F11

In addition to the information in this manual, Radiotelex offers detailed on-line help information. To get help at any time, press either **shift-F1** or **F11** in the relevant field.

Fast keys

Fast keys are key combinations of the **Alt** key and a function key, e.g. **F1**. Pressing the **Alt** key pops up a table of fast keys. Fast keys may be changed in the setup part of Radiotelex.

There are also a few short cuts assigned to the **Ctrl** key. For instance, pressing **Ctrl-C** takes you to the TELEX terminal or FEC terminal dependent on which part of Radiotelex was used previously.

The function of the **Alt** key is always the same. The function of the **Ctrl** key, however, depends on the situation. Thus, when communication is taking place, **Ctrl-L** toggles logging.

Password

As already mentioned, certain areas of Radiotelex are protected by a password. Such areas can only be altered by technicians who know the password. Still, even though the user of the system cannot change the data of the program, these can always be viewed.

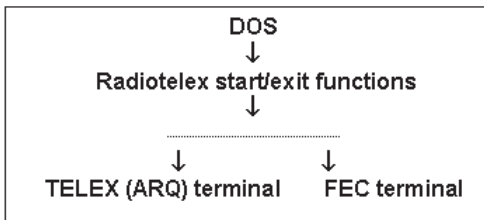
The system will tell you when a password is required to change some data:

PASSWORD	
F10 Return to TELEX setup	
Password . . .	<Not shown>
Press F11 or Shift-F1 at any time to get help	
F2 Check password	F3 View only

To continue without a password
press **F3 View only**.

2.2 Terminals

The TELEX and FEC terminals are the centres of Radiotelex. From them, the various functions of the system can be reached:



To swap between the TELEX and FEC terminals
select:

1. **F8 Menus**
2. **F1 Mode**
3. The appropriate terminal.

The terminals simulate the printer paper of an old-style TELEX terminal. Thus, characters that have been received or transmitted are shown. Radiotelex has a terminal for both ARQ (called TELEX in the Radiotelex terminology) and FEC traffic. The TELEX and FEC terminals are operated in the same way, and the differences are few.

The terminals are the centres where all transmissions and receptions are initiated, and all actions are chosen.

The FEC terminal, however, will probably not be used much. It is recommended that FEC scans to catch news broadcasts and traffic lists are set up from **F4 Rx** in the TELEX terminal. The news and traffic lists are normally printed, while FEC transmissions are rarely used.

2.3 Terminal function keys

The terminals operate with two sets of function keys. Which set is used depends on whether Radiotelex is 'standby' (not receiving, calling or transmitting), or NOT 'standby'. Only the TELEX terminal is described below, but the FEC terminal is very similar.

Function keys when 'standby'

RADIOTLX	M/S ULYSSES	Monday 13/9/96 13:56
TELEX (ARQ) TERMINAL		
F10 Return to DOS		F1 TELEX terminal functions
F2 Distress	F3 TX	F4 Rx
F5 Message	F6 Subscriber	F7 View
F8 Menus		
The modem is scanning 9 frequencies in 27.0 seconds		

F1 Terminal

functions A window with the 'standby' function keys pops up. Unlike the other function keys, **F1 Terminal functions** is the same whether 'standby' or not. It is useful when Radiotelex is not 'stand-by' since the function keys on the screen shown above are then the *not 'standby'* function key set (shown below). You can select among the following:

- | | |
|----------------------|--|
| F2 Distress | Distress mode. |
| F3 TX | Transmission-related functions (setting up, deleting, table of scheduled transmissions etc.). |
| F4 Rx | Receive-related functions (setting up an Rx session, enabling/disabling Rx etc.). |
| F5 Messages | Message handling (creating, copying, deleting etc.).
Messages not logged. |
| F6 Subscriber | Subscriber handling (creating, copying, deleting etc.). |
| F7 View | Selects between the following views: <ul style="list-style-type: none"> • TELEX connection • TELEX errors • System status • Current scanning • Logged TELEX messages • Traffic history |
| F8 Menus | Selects between the following menus: <ul style="list-style-type: none"> • Mode • Setup • Service • Guidance |

F10 Return to DOS

Exits Radiotelex, performing a backup if wanted.

Function keys when not 'standby'

RADIOTLX		M/S ULYSSES		Monday 13/9/96 13:56			
TELEX (ARQ) TERMINAL							
F10 Return to DOS				F1 TELEX terminal functions			
<pre> *** 16/9-96 17:23:24 Message to EuroCom Industries ***** * MARITEX S * 26371 GA+?fax4542485353+ MSG+? </pre>							
F2 Bell	F3 Time	F4 Date	F5 Message	F6 WRU	F7 DE	F8 Over	F9 Break
Text transmission allowed							

F1 Terminal functions

The 'standby' function keys, described above, become available in a pop-up window.

F2 Bell

Transmits the special symbol bell.

F3 Time

Transmits the current time.

F4 Date

Transmits the current date.

F5 Message

Transmission of a message.

F6 WRU

'Who are you?' The other station is asked to transmit its answer back.

F7 De

Transmits your own answer back.

F8 Over

Changes direction.

F9 Break

Breaks the connection.

The above function keys are active dependent on the situation. If Radiotelex is the IRS (Information Receiving Station), the keys involving transmission (**F2** to **F7**) are not available.

2.4 Backups

To make a backup

1. From one of the terminals, leave Radiotelex by pressing **F10**.
2. Start up again.

Backups can only be made when leaving Radiotelex. When you press **F10** at the terminal to leave Radiotelex, you will be prompted to make a backup.

Furthermore, when starting up, Radiotelex will ask whether or not previously backed-up data are to be restored.

Background information on backups

In order to meet the GMDSS safety requirements, Radiotelex is always delivered on a non-volatile board like an EPROM board or flash EPROM board. This ensures that the Radiotelex program and its initial settings cannot be lost due to power failure or power off. Furthermore these data cannot be erased by accident.

Data (e.g. messages) cannot be saved on this board. In order to save data temporarily, Radiotelex creates a RAM disk. A RAM disk is used exactly like a normal disk drive, but is a volatile medium: The contents are erased in case of power failure and when the power is switched off.

The RAM disk only provides temporary storage. Therefore, before the power is switched off, it is necessary to perform backups to ensure that data are not lost but saved on the backup diskette.

The non-volatile board on which Radiotelex is delivered, ensures that it is always possible to communicate using Radiotelex. So even if a backup diskette that is lost or out of order is an inconvenience, it does not enforce a communication breakdown.

Backup policy

Backups should be made regularly, e.g. once every 24 hours. Backups should always be made when subscribers have been created, the setup has been changed, or anything else of importance has taken place.

In order to keep the backup as short as possible, it is advisable to check the logged messages (both TELEX and FEC) and the traffic history before making

the backup. Then, delete the logged messages that you do not consider important. Also, delete the traffic history unless it contains important information to be kept.

Radiotelex on hard disk

The Radiotelex software can be installed on a hard disk as a supplement to the non-volatile board. The hard disk delivered from the factory is suitable for use in a maritime environment. However, as a hard disk cannot be completely reliable, the non-volatile board is always necessary.

Data are stored on the hard disk automatically. Therefore, when the Radiotelex program is executed from the hard disk, backup procedures are not necessary. However, since the hard disk could crash, it is recommended to make a backup to a diskette at an initial stage when relevant subscribers have been created and setup changes have been performed.

2.5 Transmission

Radiotelex only supports manual transmissions. There is no scanning of a free signal but Radiotelex sets up the transmitter frequency enabling you to hear when the channel is vacant and the transmission can be initiated. Furthermore you have to type in the call code yourself.

RADIOTLX	M/S ULYSSES	Monday 13/9-96 13:56
MANUAL TELEX TRANSMISSION		
F10 Return to TELEX (ARQ) terminal		F1 Modify field
Call code	86901	
Channel type	ITU intership channel	
Channel	401	
Own RX frequency . .	4202.500 kHz	
Own TX frequency . .	4202.500 kHz	
Press Shift-F1 or F11 at any time to get help		
F2 Transmit F4 Manual TX F5 TX Table F7 View		
Scanning stopped, enabling listening to own TX frequency		

The manual transmission form consists of the following fields:

Call code	Call code of the destination.
Channel type	Choose between the following options: <ul style="list-style-type: none"> • ITU intership channel • ITU coast station channel • Frequencies • ITU distress and safety frequencies.
Channel	Type the channel number. Not available when 'Frequencies' has been chosen as channel type.
RX frequency	Type the RX frequency. Only available when 'Frequencies' has been chosen as channel type.
TX frequency	Type the TX frequency. Only available when 'Frequencies' has been chosen as channel type.

When channel or frequency fields have been filled with valid values, the transceiver is set up with these frequencies. Thus listening to the TX frequency is enabled. Simply alter the channel or frequency fields until a free channel has been located.

2.6 Scanning

In order to receive an incoming telex call you have to set up an Rx session. Radiotelex only supports a single manually initiated Rx session and it only supports scanning of a single frequency. The method for setting up an Rx session is very similar to performing a manual transmission. The first step to do is to press **F4 Rx** in the terminal.

The Rx window will list the current Rx session (if any). To create a new session (or modify the existing session) press **F1 Modify Receiving**. In the next window just select the station or subscriber of interest and the channel to scan. Note that only a single frequency can be selected.

Press **F2 Save** when you have selected the station/subscriber and the frequency. Radiotelex will scan the selected channel continuously until the scheduled Rx is either deleted or manually disabled (in the **F5 Rx control** menu).

Note that a manual transmission has higher priority than the Rx session. This implies that the Rx session will be “disabled” during the transmission session. The Rx will be restarted once the transmission session is terminated.

You may need to update or create a new station/subscriber if the default stations provided by Radiotelex does not list the frequency of interest (the two default stations “ITU Ship Station Channels” and “ITU Coast Station Channels” only show a subset of the valid ITU channels).

2.7 Message handling

‘Message handling’ is used to type in messages before transmission, possibly in order to perform an automatic transmission.

To go to the ‘Message handling’ form
In the terminal, press **F5 Message**.

RADIOTLX	M/S ULYSSES	Monday 13/9/96 13:56
MESSAGE HANDLING		
F10 Return to TELEX (ARQ) terminal		F1 Edit message
Messages New message ETA 150996 Position report 100996 Position report 110996 Position report 120996 Position report 130996		
F2 Copy	F3 Delete	F4 Rename
F5 Print	F7 Import	F8 Export
The modem is scanning 9 frequencies in 27.0 seconds		

To write a new message

select ‘New message’.

To modify an existing message

select the relevant message.

An existing message can be edited, copied, deleted, renamed and printed. Also, as explained in the following, messages can be imported and exported:

Import of message

To import a DOS text file to the Radiotelex message system, select **F7 Import**. The DOS file is specified by browsing the DOS directories.

Export of message

It is also possible to export – i.e. copy to a DOS file – an existing message. The exported file can e.g. be imported by a word processor or copied to another computer. Selecting **F8 Export** allows you to specify directory and DOS file name for the selected message,.

2.8 Subscriber handling

To see a list of existing subscribers press **F6** at the terminal.

RADIOTLX	M/S ULYSSES	Monday 13/9/96 13:56
SUBSCRIBER HANDLING		
F10 Return to TELEX (ARQ) terminal	F1 Edit TELEX subscriber	
Subscribers <hr/> New subscriber Distress and safety TELEX & FEC (to be received)		
F2 Copy	F3 Delete	F4 Rename
F5 Hide	F6 Recover	F7 Import
The modem is scanning 9 frequencies in 27.0 seconds		

Radiotelex distinguishes between coast stations and subscribers. A subscriber is a station without coast station capabilities, e.g. a land telex station or a ship.

To create a new subscriber

select 'New subscriber'.

To modify an existing subscriber

move the cursor bar to the relevant subscriber and select **F1 Edit TELEX subscriber**.

Subscriber edition in general

A subscriber may consist of several parts, e.g. a land telex part or a ship telex part. As some subscriber parts are more complex than others, the edition of a subscriber part has been divided into three sections where appropriate. These sections are:

General part These general values will always have to be filled in. When a subscriber part has been chosen, the general values are accessed in a form.

Advanced This is a set of default values that will rarely have to be changed.

Procedures Procedures are used to perform automatic transmissions. A procedure provides a list of instructions on how to communicate to a specific station in special cases. Normally no procedures are defined for a subscriber.

Advanced and **Procedures** are accessed from the form containing the general values. Furthermore, **Advanced** and **Procedures** are password-protected. Still, the contents can always be viewed.

Subscriber parts

A subscriber consists of several parts. The following subscriber parts can be defined: Land telex, ship telex, telefax, telephone modem, voice phone, voice bank phone, Radiotelex letter, telegram and satellite. However, in most cases only one or two of the parts will be detailed for each subscriber.

When the properties of a subscriber change, e.g. if a fax number has to be added to the subscriber, it is easy to edit the existing subscriber, adding the relevant details.

To delete a part of a subscriber

select the relevant part and press **F3 Delete** in the form describing the part.

In order to transmit to a subscriber, it is necessary that a coast station supports the communication form (except for ship telex). For instance the satellite part is not used since coast stations cannot handle this even though it has been defined in the recommendations. Refer to the section about land telex below.

Below some of the subscriber parts are described. Please refer to the Radiotelex on-line help as well.

Land telex

Land telex has two fields that need to be filled in: country code and telex number. The country code field is described in the chapter 'Coast station setup' in the last part of this manual – 'Configuration'. The telex number is the subscriber's telex number without any land telex country code.

To reach an Inmarsat A, B or C station (both ship and land stations), enter the country abbreviation 'SAT' and the telex number of the station. Since the country abbreviation 'SAT' is not used by any coast station, during the transmission setup Radiotelex will ask for a direction code. Enter the Inmarsat region code (e.g. 581 for Atlantic Ocean Region East).

Ship telex

It is sufficient to enter the master frequencies. The slave frequencies are optional. For information on the difference between the master and slave frequencies, please refer to the chapter 'Coast station setup' in the last part of this manual – 'Configuration'. The on-line help may be useful as well.

Satellite

The satellite option is not useful since it is not supported by many coast stations (if any at all). To transmit a telex to an Inmarsat A, B or C ship, please refer to the above description of land telex.

Hiding and recovering subscribers

Subscribers that are not used for a long period of time can be *hidden* instead of deleted. When they are needed again, they can be recovered.

To hide a subscriber

move the cursor bar to the relevant subscriber, and select **F5 Hide**.

To recover a subscriber

select **F6 Recover** for a list of hidden subscribers, and select the subscriber to be recovered.

2.9 VIEW function

The **F7 View** function provides information that may be useful at different points. The function differs a bit dependent on the mode.

View is not only available in the terminal. It can also be used in e.g. the receive and transmission parts of Radiotelex.

Pressing **F7 View** in the TELEX part of the system will display a number of selectable items. These are described below. The corresponding **View** items of the FEC part of the system are quite similar to the ones shown here:

TELEX connection

shows information on the present or latest TELEX (ARQ) connection. This information includes: subscriber, coast station and frequencies.

TELEX errors

details the quality of the connection by giving information about the number of repetitions. Both the total number and the number relative to the total of transmitted and received characters are shown.

System status

contains information about the schedules, modem and frequencies.

Logged TELEX messages

keeps up to a hundred logged TELEX messages. When the total reaches one hundred, the oldest message is deleted every time a new message is logged. In the setup part of Radiotelex, it can be specified what information is to be logged.

Similarly, Radiotelex can log a hundred FEC messages and a hundred distress messages.

Traffic history

details *what* communication took place *when*. If, for instance, a message needs several attempts to be transmitted successfully, the traffic history will detail each attempt.

2.10 Distress

The telex distress frequencies are not scanned by coast stations. *A distress transmission must always be initiated by the DSC function.* This will set up the frequencies of the radio as indicated in the DSC call or reply. When the distress transmission has been set up by the DSC function and the communication has begun, the parties communicating can decide to use another frequency without DSC usage.

Distress Transmission

To set up a broadcast FEC or selective FEC transmission select **F2 TX FEC**.

To set up an ARQ transmission select **F3 TX ARQ**.

Even though distress mode is a special shell that discloses all other activities, the normal FEC and TELEX (ARQ) terminals respectively are used for this communication.

To change the frequency to be transmitted on select **F4 Scan/Frq**.

F5 Message contains the normal message handling. Therefore it is possible to write a distress message beforehand and then just edit to fill in the last details if the distress situation occurs.

Distress SCAN function

RADIOTLX		DISTRESS MODE: Press Alt-D to exit distress mode		M/S ULYSSES		Monday 13/9-96 13:56	
DISTRESS FREQUENCY							
F10 Return to FEC terminal				F1 Select frequency			
Frequency entries							
0:00 - 24:00	ITU CH ?	2174.500	kHz	Simplex			
0:00 - 24:00	ITU CH 411	4177.500	kHz	Simplex			
0:00 - 24:00	ITU CH 611	6268.000	kHz	Simplex			
0:00 - 24:00	ITU CH 801	8367.500	kHz	Simplex			
0:00 - 24:00	ITU CH 1287	12520.000	kHz	Simplex			
0:00 - 24:00	ITU CH 1624	16695.000	kHz	Simplex			
Use the cursor keys and F1 or F10							
The modem is listening to a single frequency for FEC and ARQ							

F4 Scan/Frq allows for simple selection of a distress frequency.

Distress VIEW function

This function resembles the **View** function found outside distress mode. However, in distress mode only **System status**, and **Logged distress messages** are available.

Similar to TELEX and FEC, only a hundred distress messages can be logged. After that, the oldest distress message is overwritten when a new message is logged.

2.11 Status messages

Below various status messages of Radiotelex are explained. These messages appear in the lowest part of the screen.

No usable COM ports available

No serial communication ports are available. If any are installed, they are used by other hardware like e.g. a mouse.

Searching for external equipment

Searching for the Radiotelex board.

External equipment found

The Radiotelex board has been located.

No external equipment found yet !

The Radiotelex board has not yet been found.

The connection to modem has been lost !

The Radiotelex program cannot communicate with the Radiotelex modem any longer. First, check cable connections between the computer and the modem. Then, exit Radiotelex and start again.

Connecting to modem ...

The modem has been located, and the communication works fine. Initializing information between the computer and the modem is exchanged.

The modem is in 'standby' state

Radiotelex is not calling, transmitting, receiving or scanning. The modem is idle.

Fatal error from modem (read the Traffic History) – connection locked !

The Radiotelex program and the modem are out of synchronization. Please read the Traffic History, and report to your dealer. Exit Radiotelex and restart.

Updating modem for transmission ...

A transmission has been initiated. The transmission details are currently

being transferred from the computer to the modem, and the modem is setting up the radio.

Modem is calling ...

Radiotelex is calling a coast or a ship station.

TELEX communication in progress !

Telex (ARQ) communication is in progress. The radio link between the two involved radios and modems has been established, and actual communication has begun or is about to begin.

TELEX communication requires attention! Go to TELEX (ARQ) terminal

Telex (ARQ) communication is now taking place. The communication is not an automatic telex transmission that can take place unattended. Radiotelex is not in the TELEX (ARQ) terminal currently: Therefore, this status message tells the operator to go to the TELEX (ARQ) terminal and pay attention to the communication.

Reception in progress

In a telex (ARQ) connection, Radiotelex is now receiving. Only the **F8 Over** and **F9 Break** function keys are available.

Changing direction ...

The operator has pressed **F8 Over** to change the direction.

Text transmission allowed

The operator can now transmit any text by typing the text manually, or by pressing **F5 Message** to select an already typed in message. All function keys of the terminal can be used.

TELEX rephasing in progress !

An MF/HF radio is not always an easy medium to deal with. If a radio connection is bad and repetition has occurred 32 times in a row, rephasing may begin. During rephasing, the two modems try to synchronize again.

The transmission has failed !

The call to the station did not succeed, or possibly a message was not transmitted completely. This status message is also issued if **F9 Break** is pressed.

Break in progress

A break has been issued by Radiotelex.

FEC reception in progress !

FEC communication is now being received. The transmission being received can be a broadcast FEC transmission or a selective FEC transmission to your ship.

The modem is disabled

The modem has been disabled. See explanation below.

Modem disabled by function Rx Control

Scanning has been disabled by the scan control function. Scanning can be enabled again in the terminal function **F4 Rx**. When the modem is disabled, all scanning is stopped, and transmission cannot take place.

Scanning stopped, enabling listening to own TX frequency

A transmission to a ship is being set up. In order to let the operator check if the channel is vacant, all scanning has been stopped, and the radio has been set up with the TX frequency in the receiver.

TELEX messages logged - #

Number of logged TELEX messages. The maximum is a hundred. If a hundred TELEX messages have been logged, the next time a message is logged, the oldest message is deleted. For further information, please refer to 'TELEX log setup' in the 'Configuration' section.

FEC messages logged - #

Number of logged FEC messages. The maximum is a hundred. If a hundred FEC messages have been logged, next time a message is logged, the oldest message is deleted. For further information, please refer to 'FEC log setup' in the 'Configuration' section.

The radio is busy !

Right after switching on, in order to have a frequency stability of ± 10 Hz, the radio has to warm up. During this warm-up, the above message is issued.

If the radio is being configured, the radio is also busy.

When used for telephony, the status message 'The radio is not ready' is shown.

The radio is controlled by DSC !

The DSC function has taken control, and Radiotelex has stopped all scanning and all transmission.

The radio is not ready !

The control unit is not in telex mode, or the handset is off hook.

The radio is disconnected !

No communication with the radio. The radio may be switched off.

Transmission to connected FEC subscriber. Go to FEC terminal.

FEC transmission is now taking place. Radiotelex is not in the FEC terminal currently. Therefore, this status message tells the operator to go to the FEC terminal to pay attention to the transmission.

The modem is listening to a single frequency

Listening for traffic. A scan containing only a single frequency has been set up.

Secret reception in progress !

Radiotelex offers the possibility of hiding the communication. Refer to TELEX secret setup for further details.

Distress messages logged - #

In distress mode, all communication is logged. Only a hundred messages are kept in the log. The oldest logged message will then be deleted when a new one is logged.

The modem is listening to a single frequency for FEC and ARQ

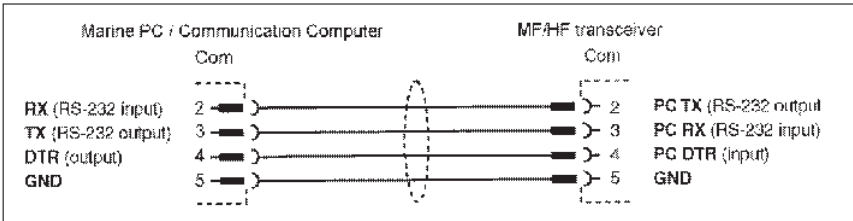
In distress mode, Radiotelex listens for both FEC and ARQ traffic automatically.

3 Installation and configuration

3.1 Installation

System wirings

Below system wirings are shown for different configurations.



Setting time and date

Information on date and time is shown in the upper right corner of the screen. The system uses date and time to stamp received and sent messages.

Before installation or execution, the date and time stamps can be checked and set. This is done by means of the two DOS commands 'time' and 'date'.

Setting time

If Radiotelex is running, return to DOS by exiting Radiotelex. At the DOS prompt, write 'time' and press **enter**.

DOS replies e.g.: Current time is 2:49:02.65p
Enter new time: _

If the time is correct, just press **enter**. Otherwise enter a new time, e.g. 8:44p, and press **enter**.

Setting date

If Radiotelex is running, return to DOS by exiting Radiotelex. At the DOS prompt, write: 'date' and press **enter**.

DOS replies e.g.: Current date is Thu 12-19-1996
Enter new date (mm-dd-yy): _

If the date is correct, just press **enter**. Otherwise enter a new date, e.g. 12-20-96, and press **enter**.

Installation on flash EPROM board

The flash memory board is a non-volatile medium, which complies with the GMDSS requirements.

The flash memory board facilitates installation. Insert the Radiotelex flash memory installation diskette in the computer, and type:

```
a: [b:] enter
install enter
```

Any software applications present on the flash memory board are now deleted, and the Radiotelex program is installed. This process may take up to fifteen minutes.

Installation on hard disk

Normally, the Radiotelex program is installed on a non-volatile medium, like the flash memory board. A RAM disk is used for temporary storage, and it is necessary to make backups.

However, the Radiotelex program can also be installed on a hard disk. In that case, it is not necessary to make backups. Still, as a hard disk can crash, the non-volatile installation is necessary to comply with the requirements of the GMDSS.

Thus, after the installation has been finished, it is advisable to make one backup diskette, as described in this chapter. If it becomes necessary to use the non-volatile installation (e.g. the flash memory board), this backup diskette can be used when Radiotelex prompts to restore. This ensures that the basic installation is the same as when used on the hard disk.

RADIOTLX	Ship without name	Monday 13/9-96 13:56
INSTALLATION		
<p>F10 Return to DOS</p> <p>F1 Install RADIOTLX version 2.20 F2 Change RADIOTLX home from C:\RADIOTLX F3 Change RADIOTLX.EXE directory from C:\RADIOTLX</p> <p style="text-align: center;">Press F11 or Shift-F1 at any time to get help</p>		
Select a function by pressing one of the above keys		

To install the Radiotelex program

change the home directory and where the Radiotelex executable file should be installed, by means of **F3** and **F2** respectively. When satisfied, start the installation by pressing **F1**.

Config.sys and Autoexec.bat

The config.sys and autoexec.bat files should be configured to provide maximum available memory and to use smartdrv. Below examples of config.sys and autoexec.bat are shown. These may need some modification, e.g. it is assumed that only one hard disk is available and that a network is not installed (lastdrive=c).

Config.sys

```
device=c:\dos\himem.sys
device=c:\dos\emm386.exe noems
dos=high,umb
files=20
buffers=40
shell=c:\dos\command.com c:\dos /e:256 /p
lastdrive=c
fcbs=1
```

Autoexec.bat

```
@echo off
loadhigh c:\dos\fastopen c:
loadhigh c:\dos\doskey
loadhigh c:\dos\smartdrv /x
prompt $p$g
path c:\dos;c:\radiotlx
set temp=c:\dos
```

Modem setup

The modem setup requires various information.

To supply information

press:

1. **F8 Menus.**
2. **F2 Setup.**
3. **F5 Modem Setup.**

To save information

press **F2 Save**. The values are locked by the modem. Unless a factory reset is performed, the values cannot be altered.

RADIOTLX	M/S ULYSSES	Monday 13/9/96 13:56
MODEM SETUP		
F10 Return to Setup		F1 Modify field
5 digit call code (identity code)	84532. (Digits only)	
9 digit call code (MMSI number)	219000246. (Digits only)	
Abbreviated ID	SPRA. (Letters only)	
Non-standard answer-back	12345 SPRA X .	
Pre-key in milliseconds	5	
Post-key in milliseconds	1	
Frequency shift (Hz)	170.0 Hz	
Radio interface	Extended (T+Bus)	
Press F11 or Shift-F1 at any time to get help		
F2 Save F7 Default values		
The modem is in 'standby' state		

Note: The non-standard answer-back field must also contain appropriate letter/figure shifts and other special characters available in the **F1 Modify field**.

Parts of the above fields are described below. Please refer to the on-line help as well.

Answer backs in Radiotelex

Dependent on the situation and the setup, Radiotelex transmits one of three possible answer backs:

- 1) 5-digit call code + abbreviated id + X
- 2) MMSI number + abbreviated id + X
- 3) Non-standard answer back

Below is a description of which answer back will be used when.

Call code and MMSI number in answer back

In the automatically generated answer back, the call code or the MMSI number is part of the answer back. If only one of the two is specified, Radiotelex uses the specified one in the generation of the answer back.

However, both the 5-digit call code and the MMSI number may be specified. In that case, Radiotelex uses the 5-digit call code or the MMSI number in the answer back, dependent on the call code used when the connection was established. If Radiotelex called or was called using a 5-digit call code, Radiotelex transmits its 5-digit call code in the answer back. If an MMSI number was used, Radiotelex transmits its MMSI number in the answer back.

Abbreviated ID in answer back

The abbreviated ID is used when generating the answer back of M/S ULYSSES automatically. The standard answer back consists of:

- Figure shift
- Carriage return
- Line feed
- 5 digit call code or MMSI number
- Letter shift
- Space
- Abbreviated ID
- Space
- Letter shifts to bring the total length up to 20
- X

Non-standard answer back

In general coast stations identify a ship by the answer back that Radiotelex generates automatically. However, Radiotelex uses the non-standard answer back in connection with coast stations that do not follow recommendations and thus cannot identify a ship by the answer back generated automatically by Radiotelex.

In order to force Radiotelex to transmit the non-standard answer back in connection with a specific coast station, it is necessary to edit the coast station in the setup part of Radiotelex. In the coast station setup, the field 'Non-standard answer-back used' must be set to 'Yes'. This has been done for Maritex coast stations already. Only when this field has been set to 'Yes' does Radiotelex transmit the non-standard answer back. In all other situations Radiotelex transmits the automatically generated answer back.

Please note that the non-standard answer-back field must contain appropriate letter/figure shifts and other special characters available in the **F1 Modify field**. Radiotelex does not modify the specified non-standard answer back in any way.

Radio interface

The radio interface has three possible values:

Extended (T+Bus)	Default.
Standard (T+Bus, one way)	Not used.
None	Used for demonstration purposes on a computer without an attached modem. The modem software must be 2.8.0 or later, preferably 2.9.0 or later.

Factory reset

The values in the modem are locked and can only be reset by a factory reset. Please refer to the relevant hardware manual for more information.

Printer setup

The printer setup is located in:

1. **F8 Menus**
2. **F2 Setup**
3. **F6 Computer**
4. **F2 Printer Setup**

Please note that if a printer using a paper roll is used, as is the case with the default printer, the paper length must be set to zero.

Ship name

The ship name possibly including the call sign.

Setting up subscribers

Create ship owner and dealer subscribers.

Hiding subscribers and coast stations

Subscribers and coast stations that are not used can be hidden. This makes selection lists shorter without deleting stations. They can be recovered if necessary. See further information in the 'Configuration' section.

Backup installation

To have a diskette with the basic installation, a backup should be made by leaving Radiotelex when the installation has been finished. Now restart Radiotelex, restoring the previously made backup diskette. Then perform another backup on another diskette by leaving Radiotelex again. There are now two backup diskettes: One for daily operation, and another one to be used if the former is faulty or lost.

3.2 Configuration

Coast station setup

For a list of existing coast stations

select:

1. **F8 Menus**
2. **F2 Setup**
3. **F1 Coast station.**

RADIOTLX	M/S ULYSSES	Monday 13/9/96 13:56
SETUP COAST STATION		
F10 Return to Setup	F1 Edit coast station	
Coast stations		
New coast station		
Bern Radio, Switzerland		
Cape D'Aguilar Radio, Hong Kong		
Lyngby Radio, Denmark		
Maritex, Argentina		
Maritex, Europe		
Maritex, Panama		
Maritex, Phillipines		
Maritex, USA / New Orleans		
Maritex, USA / San Francisco		
Madrid Radio, Spain		
Mobile Radio, Alabama USA		
F2 Copy F3 Delete F4 Rename F5 Hide F6 Recover F7 Import		
The modem is scanning 9 frequencies in 27.0 seconds		

To create a new coast station
select 'New coast station'.

To modify an existing coast station

move the cursor bar to the relevant coast station, and select **F1 Edit coast station**.

Hiding and recovering coast stations

Coast stations that are not used for a long period of time can be hidden instead of deleted. When they are needed again, they can be recovered and used by Radiotelex again.

To hide a coast station

move the cursor bar to the relevant coast station, and select **F5 Hide**.

To recover a coast station

select **F6 Recover** for a list of hidden coast stations, and select the coast station to be recovered.

Import of coast station

If a coast station has been deleted and is to be used again, or a new coast station is to be used, it can be imported from a Radiotelex backup file.

SHOW: Coast station setup

To view the capabilities of a particular coast station, move the cursor bar to that station, and press **F8 Show setup**.

Coast station edition

General information

Coast station edition has been divided into three parts.

General part	The general values will always have to be filled in. When a coast station part has been chosen, these values are accessed in a form
Advanced	Radiotelex provides a set of default values. These will rarely have to be changed.
Procedures	Procedures are used to perform automatic transmission. A procedure provides a list of instructions specifying how your station is to be communicated to in connection with various coast station commands like DIRTLX, TLX etc.

Right after the selection of a coast station, the general part is accessed. (If 'New coast station' is selected, the name of the new coast station will have to be filled in first). The sections **Advanced** and **Procedures** can be accessed from the form containing the general values. Both **Advanced** and **Procedures** are password protected, but the contents can always be viewed.

Performing coast station edition

RADIOTLX	M/S ULYSSES	Monday 13/9/96 13:56
EDIT COAST STATION - 'LYNGBY RADIO, DENMARK'		
F10 Return to Setup coast station		
Country abbreviation	DNK (Letters only)	
Country code (phone)	45 (Digits only)	
Coast station master frequencies ...	16 frq: 2.1-25.1 Mhz (Coast station calls)	
Coast station slave frequencies	0.0 kHz (Master used when Radiotelex	
Call code	0832 (Digits only)	
Abbreviated ID	(Letters only)	
Answer back	0832 AUTOTX DK .	
Non-standard answer-back used ...	NO	
Accounting ID (AIC)		
Antenna position	55°50' North 11°25 East (90°01', 180°01' : Not shown on station map)	
F2 Save F3 Delete F5 Advanced F6 Procedures		
The modem is scanning 9 frequencies in 27.0 seconds		

The following is a description of some of the fields of the general coast station form shown above. Please refer to the on-line help for further information.

Country abbreviation:

The country abbreviation must comply with the maritime abbreviations used in the list of coast stations.

The country abbreviation is used during the setup of a transmission to a land telex subscriber. If the land telex subscriber and the coast station used as a link between Radiotelex and the subscriber do not reside in the same country, Radiotelex will ask for a land telex country direction code used from the coast station country to the subscriber country. This code will be prefixed the land telex subscriber number automatically during transmission.

Coast station master and slave frequencies:

The edition is seen from the point of view of the subscriber. The master

frequencies are used when Radiotelex is scanning the coast station for traffic since in that situation the coast station will be the caller. The slave frequencies are used when Radiotelex is calling the coast station since in that situation the coast station will be the slave station.

In short, when setting up a scan of the coast station being edited, the master frequencies are used; when setting up a transmission to the coast station being edited, the slave frequencies are used.

If slave frequencies are not specified, master frequencies are used when calling (and scanning for a free signal) a coast station, too.

Abbreviated ID and answer back:

The call code and the abbreviated ID provide the means for automatic generation of the answer back of a coast station. However, the answer back can be given explicitly in the answer back field. If this field has been filled in, this answer back will be used.

Non-standard answer back used:

Not all coast stations follow the recommendations when it comes to answer backs. The Swedish company Maritex, for instance, can assign subscribers a Swedish land telex number to be used as answer back. Therefore, Radiotelex needs to know whether the non-standard answer back is to be used when communicating with the coast station being edited. When the 'Non standard answer back used field' is set to 'Yes', Radiotelex non-standard answer back as specified in the modem setup is used (see the section on 'Installation').

TELEX print setup

By default all communication is printed.

TELEX tape puncher setup

By default the only communication punched is when Radiotelex is the slave – i.e. Radiotelex has been called by the other station.

TELEX log setup

By default Radiotelex logs all communication when Radiotelex is the slave. When the system has called another station – and is thus the master – only conversation is logged. That is because a message being transmitted already exists in 'Message handling'.

TELEX TTY setup

During communication the terminal is not necessarily the active window. The TTY setup specifies how many minutes it is allowed not to be in the terminal before the communication is broken.

This function only applies to conversation, and only when Radiotelex is the master.

Values of zero disable the time outs.

TELEX retry setup

There is no guarantee that MF/HF transmissions are successful every time. The 'hit rate' is not like e.g. Inmarsat-C communication. That is the reason for the retry concept: If a transmission is not successful, it is stored in a retry schedule, and retransmission can be attempted at a later time.

In the **TELEX retry setup** it can be specified how many times retransmission is to be attempted and how many minutes there are to be between each attempt. Furthermore, different values can be specified for ship calls and coast station calls.

Values of zero disable the retry schedule.

Note that if a transmission is broken by using **F9 Break**, the transmission is deleted from the retry schedule automatically.

Transmissions in the retry schedule can be viewed or deleted in the transmission table available by pressing **F3 TX** in the terminal and then **F5 TX Table**.

TELEX secret reception setup

Secret reception may be initiated upon the reception of a configurable sequence of characters. The secrecy continues until the connection is broken or, if specified, either of two programmable sequences of characters are received.

During secret reception nothing is printed. Also, the keyboard cannot be used to send anything to the connected subscriber.

Secret reception is logged in a special password protected file queue irrespective of the configuration of the normal log.

FEC TTY setup

During communication the active window is not necessarily the terminal. The TTY setup specifies how many minutes it is allowed not to be in the terminal before the communication is broken.

The functionality applies to conversation only, and only if Radiotelex is the master.

Values of zero disable the time out.

Printer setup

Selection of printer type and paper length. If the paper roll is used, set paper length to zero.

The default parallel port is LPT1. If several parallel ports are available, another port can be selected. A serial printer cannot be used.

Fast key setup

Radiotelex enables the use of fast keys (short cuts). A default set of fast keys is provided, but if you find that there is a specific function you use quite often, you can set up a fast key for this specific function.

It will probably be an advantage to keep the **Alt-F1 TELEX (ARQ) terminal** and the **Alt-F2 FEC terminal**, but the rest can be configured as you wish.

The fast key for getting into distress mode can also be changed. The default value is **Alt-D**.

To go to the 'Fast-key setup' select:

1. **F8 Menus.**
2. **F2 Setup.**
3. **F6 Computer.**
4. **F2 Fast-key setup.**

To configure a fast key

1. In the 'Fast-key setup', move the cursor bar to the desired place by means of **arrow up/down**.
2. Select the **F3 Learn fast-key**, which will take you to the terminal.
3. Now use the keys as usual until you are at the point in the program where you want the fast key to take you.
4. Press **Esc** to terminate the configuration.

To change a fast key title

1. In the 'Fast-key setup', move the cursor bar to the desired place by means of **arrow up/down**.
2. Select **F2 Change title**.

To abort during configuration

press **Ctrl-C**.

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