RADIOTELEX

Operator's manual

Please note:

Any responsibility or liability for loss or damage in connection with the use of this product and accompanying documentation is disclaimed.

The information in this manual is furnished for informational use only, is subject to change without notice, may contain errors or inaccuracies, and represents no commitment whatsoever.

This agreement is governed by the laws of Denmark.

60.245   B/9915

Contents

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*.

The PCP717 modem board is installed in an MF/HF transceiver.

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 Ship station
② Coast station
③ Telex/telephone subscriber
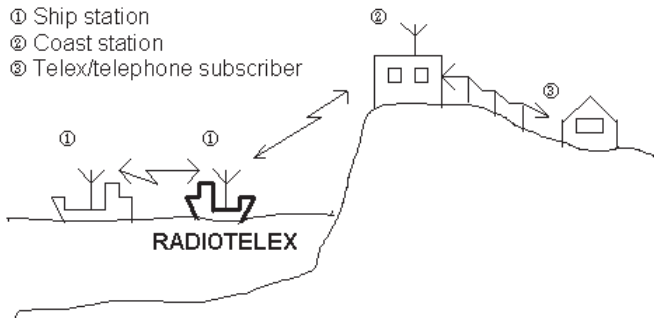
1.2   Terminology

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 communi-
                 cate 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 sub-
scriber forms. Altering the values of **Advanced** and **Pro-
cedures** 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:

```
┌─────────────────────────────────────────────────┐
│                    DOS                            │
│                     ↓                             │
│         Radiotelex start/exit functions           │
│                     ↓                             │
│           ··································        │
│           ↓                    ↓                  │
│  TELEX (ARQ) terminal      FEC terminal           │
└─────────────────────────────────────────────────┘
```
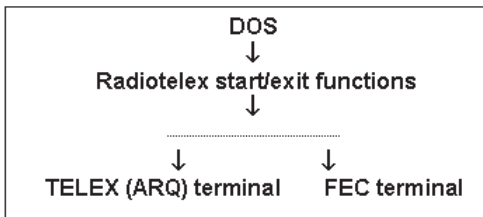
To swap between the TELEX and FEC terminals
select:
  1.   *F8* **Menus**
  2.   *F1* **Mode**
  3.   The appropriate terminal.

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* **Scan** 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 Scan    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 **Scan**	Scan-related functions (setting up, deleting, table of scheduled scans 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:

                  • TELEX connection
                  • TELEX errors
                  • System status
                  • Current scanning
                  • Logged TELEX messages
                  • Traffic history

F8 **Menus**   Selects between the following menus:
                  • 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│
│                                                                        │
│                                                                        │
│     *** 16/9-96  17:23:24  Message to Euro Com Industries ***************│
│     ⊕ MARITEX S                                                        │
│     ⊕ 26371                                                           │
│     GA+?fax4542485353+                                                 │
│     MSG+?                                                              │
│                                                                        │
├──────────────────────────────────────────────────────────────────────┤
│ 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 uses two transmission concepts: Manual and automatic. In most cases, automatic transmission provides the best support and the easiest transmission.

It is recommended that calls to coast stations are carried out in automatic transmission because then Radiotelex detects a free signal, possibly by scanning several channels.

To go to the transmission form(s)

1.   If you are not already in the TELEX og FEC terminal, press *Ctrl-C* to get there.
2.   Press *F3* **TX**

To toggle between the automatic and manual transmission forms
press *F4*.

To set up a transmission
See the chapter 'Setting up automatic transmission' or 'Setting up manual transmission'.

To initiate a transmission press *F2*.

On pressing **F2**, you will return to the terminal. Here you can follow the progress of the transmission. Or you can leave Radiotelex unattended and come back later to check the result. The 'Traffic history' shows how the transmission progressed.

Automatic transmission

In automatic transmission you do not need to be concerned about call codes and free signal recognition. Radiotelex inserts the call code of the selected destination automatically. If a coast station is involved in the transmission, Radiotelex scans the selected frequencies for a free signal and calls the coast station when a channel becomes vacant. If the destination is a ship, Radiotelex sets up the frequencies on the radio, which makes it possible to listen to the transmission frequency before initiating the transmission.

An automatic transmission not requiring any operator assistance can be set up to be sent at a later time, e.g. a few hours later or the next day.

Furthermore, if a transmission did not get through to the destination in the first attempt, it can be repeated automatically. See the chapter 'Retrying automatic transmission'.

Setting up automatic transmission

The values to be edited when initiating a transmission are described below. A later chapter provides examples of different transmissions.

Automatic transmission form

```
  RADIOTLX              M/S ULYSSES            Monday 13/9-96  13:56
 ──────────────────────────────────────────────────────────────────
                   AUTOMATIC TELEX TRANSMISSION
 ──────────────────────────────────────────────────────────────────
  F10  Return to TELEX (ARQ) terminal                  F1  Modify field


  Message . . . . . . . . . .  ETA
  Destination  . . . . . . .  S. P. Radio A/S
  Operation  . . . . . . . .  FAX: Transmit message as store-forward telefax
  Coast station  . . . . . .  Lyngby Radio
  Channel . . . . . . . . . .  7 frequencies in the range of 6267.0 - 12499.0 kHz
  Time  . . . . . . . . . . .  1356
  Date  . . . . . . . . . . .  130996

               Press Shift-F1 or F11 at any time to get help
 ──────────────────────────────────────────────────────────────────
        F2  Transmit    F4  Manual TX   F5  TX Table    F7  View
 ──────────────────────────────────────────────────────────────────
        The modem is scanning 9 frequencies in 27.0 seconds
```

The automatic transmission form consists of the following fields:

Message — Selects the message to be transmitted. A temporary message can be chosen which is only used for the particular transmission and deleted afterwards. If you want to write a message and save it, do so in 'Message handling' in the terminal.

Destination — Selects the subscriber or coast station. In the selection list, acquired by pressing *F1* **Modify field**, *F2* toggles between a list of coast stations and a list of subscribers.

Operation — Radiotelex lets you choose between the operations that the chosen destination supports (e.g. store-and-forward fax). See further details below.

Coast station — Dependent on the operation, Radiotelex lets you select a coast station or sets the field unavailable. Only coast stations providing communication means for the chosen operation can be selected.

Channel — Selects the channel for the transmission. If the transmission involves a coast station, several channels can be selected. In that case, Radiotelex scans for a free channel. If, on the other hand, the destination is a ship, Radiotelex cannot tell whether a channel is free or not. Therefore a single frequency must be selected enabling listening to that frequency.

Time
Date — By default the time and date fields are set to the current time. If you want to schedule a transmission to be transmitted at a later time, and the transmission can take place unattended, the values can be altered. If the time and date fields result in an out-dated value, an update to the present time is made automatically.

When selecting frequencies, it is advisable to consider time and distance. Also, you should not scan too many frequencies or frequency bands.

Radiotelex remembers the chosen operation and coast station for each subscriber. Therefore often the only field to be modified when initiating a new transmission is the message field.

Operations
Modifying the operation field and selecting another operation consist of a maximum of three choices enabling Radiotelex to support a variety of operations. The coast stations' use of abbreviations are shown in brackets.

Operation type:
- Transmit message
- Call for conversation
- Poll for message (MSG)
- Get status from store-and-forward system (STA)

Connection type:
- Transmit to radio directly
- Transmit to radio through a coast station relay
- Transmit to radio through a coast station store-and-forward system
- Transmit to land through a coast station relay (DIRTLX)
- Transmit to land through a coast station store-and-forward system
- Transmit via a satellite through a coast station store-and-forward system

Transmission type:
Only necessary if 'Transmit message' and 'To land through a coast station-store-and-forward system' have been chosen.

- Transmit message as land based telex (TLX)
- Transmit message as land based fax (FAX)
- Transmit message as land based telegram (TGM)
- Transmit message as land based letter (RTL)
- Transmit message as land based voice phone (TEL)
- Transmit message as land based data phone (DATA)
- Transmit message as land based voicebank phone (VBTLX)

Operations like AMV+, OBS+, TST+, INFO+ and others are obtained by selecting 'Call for conversation'. After the initiation of the transmission the coast station will reply by: GA+? Then type AMV+, OBS+ or another operation.

Transmission in ASAP queue

Saving and thus initiating a transmission is performed by means of *F2* **Transmit**. In most cases the transmission will begin immediately. However, in some cases a note will pop up on the screen telling that the transmission has been saved in the ASAP (as-soon-as-possible) queue. The transmission will then take place when possible. There can be several transmissions waiting in the ASAP queue.

When the modem is used or about to be used for another schedule (transmission or one-time reception), the transmission is saved in the ASAP queue.

Retrying automatic transmission

Maybe your automatic transmission did not get through to the destination in the first attempt. Radiotelex can be set up to retry the transmission of the message a number of
times with a number of minutes in between. To set up this feature, select:

1.   *F8* **Menus**
2.   *F2* **Setup**
3.   *F2* **TELEX setup**
4.   *F5* **TELEX retry setup**.

Radiotelex activates the retry schedule if the transmission is not stopped using *F9* **Break**. If this key is used to terminate the free signal scanning, calling or communication, the transmission is deleted from Radiotelex completely.

Examples of automatic transmission

Below the most common transmissions are described. The contents of each field in the automatic transmission form are shown. If a field is blank, edition is not necessary. Please refer to the on-line help concerning specific help for a particular field.

Tx message to land telex subscriber (DIRTLX)

Message:	Select message to be sent
Destination:	Select land telex subscriber
Operation:	Select 'Transmit message'
	Select 'Transmit to land thru a coast station relay'
Coast station:	Select coast station
Channels:	Select channels
Time:	Modify if message is to be sent later
Date:	Modify if message is to be sent later

For help, press *shift-F1* or *F11* in the relevant field.

Conversation to land telex subscriber (DIRTLX)

Message:	
Destination:	Select land telex subscriber
Operation:	Select 'Call for conversation'
Coast station:	Select coast station
Channels:	Select channels
Time:	
Date:	

For help, press *shift-F1* or *F11* in the relevant field.

Store and forward telex transmission to land (TLX)

Message:	Select message to be sent
Destination:	Select land telex subscriber
Operation:	Select 'Transmit message'
	Select 'Transmit to land thru a coast station Store-Forward'
	Select 'Transmit message as land based TELEX'
Coast station:	Select coast station
Channels:	Select channels
Time:	Modify if message is to be sent later
Date:	Modify if message is to be sent later

For help, press *shift-F1* or *F11* in the relevant field.

Store and forward fax transmission (FAX)

Message:	Select message to be sent
Destination:	Select fax subscriber
Operation:	Select 'Transmit message'
	Select 'Transmit to land thru a coast station Store-Forward'
	Select 'Transmit message as land based TELEFAX'
Coast station:	Select coast station
Channels:	Select channels
Time:	Modify if message is to be sent later
Date:	Modify if message is to be sent later

For help, press *shift-F1* or *F11* in the relevant field.

Store and forward transmission to ship (STS/TLX)

Message:	Select message to be sent
Destination:	Select ship subscriber
Operation:	Select 'Transmit message'
	Select 'Transmit to radio thru a coast station Store-Forward'
Coast station:	Select coast station
Channels:	Select channels
Time:	Modify if message is to be sent later
Date:	Modify if message is to be sent later

For help, press *shift-F1* or *F11* in the relevant field.

Request status message from coast station (STA+)

Message:	
Destination:	Select coast station
Operation:	Select 'Get status from store-and-forward system'
Coast station:	
Channels:	Select channels
Time:	
Date:	

For help, press *shift-F1* or *F11* in the relevant field.

Prompt coast station for messages (MSG+)

Message:
Destination: Select coast station
Operation: Select 'Poll for message'
Coast station:
Channels: Select channels
Time:
Date:

For help, press *shift-F1* or *F11* in the relevant field.

Call operator (OPR+)

Message:
Destination: Select coast station
Operation: Select 'Call for conversation'
Coast station:
Channels: Select channels
Time:
Date:

For help, press *shift-F1* or *F11* in the relevant field.

When connection is established and GA+? has been received, type OPR+

Transmission of OBS+, AMV+ etc.

Message:
Destination: Select coast station
Operation: Select 'Call for conversation'
Coast station:
Channels: Select channels
Time:
Date:

For help, press *shift-F1* or *F11* in the relevant field.

When connection is established and GA+? has been received, type OBS+, AMV+, INFO+, TST+, or other relevant command understood by the selected coast station.

Setting up manual transmission

In manual transmission, there is no scanning for a free signal. 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.

Manual transmission is not supported by the retry concept that exists in automatic transmission. A transmission always starts immediately.

It is recommended to use manual transmission when calling a ship that you do not want to create as a subscriber, or when calling a coast station that is not included on the coast station list.

Manual transmission form

```
┌─────────────────────────────────────────────────────────────────┐
│   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:

- ITU intership channel
- ITU coast station channel
- Frequencies
- ITU distress and safety frequencies.

Channel   Type the channel number. Not available when 'Frequen-
                   cies' has been chosen as channel type.

RX frequency   Type the RX frequency. Only available when 'Frequen-
                   cies' has been chosen as channel type.

TX frequency   Type the TX frequency. Only available when 'Frequen-
                   cies' 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.

Transmission table

In both transmission forms, a transmission table is available by means of **F5
TX Table**.

In the transmission table, you can:

- see future transmissions, and
- see transmissions that did not succeed and are now waiting to be
  retransmitted.

```
  RADIOTLX              M/S ULYSSES              Monday 13/9-96  13:56

                       TELEX TRANSMISSION TABLE

  F10  Return to Automatic TELEX transmission        F1  Show scheduled transmission


  Scheduled transmissions
   13/9-96  13:45-14:45  -  Ulysses Corporation
   14/9-96  13:45-14:45  -  Ulysses Corporation




  




                         F3  Delete    F7  View

           The modem is scanning 9 frequencies in 27.0 seconds
```

The first transmission is in the retry schedule whereas the second transmission is in the normal transmission queue scheduled for the next day.

To view details of a transmission
choose *F1* **Show scheduled transmission**.

To delete a transmission
choose *F3* **Delete**.

To get an updated transmission table
If Radiotelex finishes a transmission while on the transmission table screen, return to the previous screen and select *F5* **TX Table** again.

2.6   Scanning

To see a scan list
choose *F4* **Scan** in the terminal.

```
┌─────────────────────────────────────────────────────────────────────┐
│  RADIOTLX              M/S ULYSSES            Monday 13/9-96  13:56    │
├─────────────────────────────────────────────────────────────────────┤
│                         TELEX SCAN LIST                               │
├─────────────────────────────────────────────────────────────────────┤
│  F10  Return to TELEX (ARQ) terminal                  F1  Modify scan │
│                                                                       │
│  Scheduled scans                                                      │
│  ───────────────────────────────────────────────────────────────────│
│  New scan                                                             │
│  Continuous  Lyngby Radio, Denmark         0000-2400  9 frq: 4.2-12.6 MHz │
│  Periodic    Maritex, Europe               0855-0905  9 frq: 4.2- 8.5 MHz │
│                                                                       │
│                                                                       │
│                                                                       │
│              F3  Delete     F5  Scan control    F7  View              │
├─────────────────────────────────────────────────────────────────────┤
│         The modem is scanning 9 frequencies in 27.0 seconds          │
└─────────────────────────────────────────────────────────────────────┘
```

To create a new scan
select 'New scan'. More information is provided below.

Schedule types
Radiotelex supports three different types of schedules (types of scan).

Continuous: The selected station is scanned continuously 24 hours a day except when a periodic or a one-time schedule takes over. Periodic and one-time scans have higher priority and halt all continuous scans temporarily.

Periodic: The selected station is scanned within a limited period of time every day. It is sufficient to set the period of time to catch the beginning of the transmission, not the whole transmission. Radiotelex continues reception until the whole message has been received. All continuous scanning is superseded in this period of time. Periodic scanning is useful if you want to receive news or traffic lists.

One time: The station is scanned during a specified period of time on a certain day. One-time scanning supersedes both continuous and periodic scanning.

Modifying scan

```
RADIOTLX              M/S ULYSSES            Monday 13/9-96  13:56
                          MODIFY SCAN

F10  Return to TELEX scan list                         F1  Modify field

Station  . . . . . . . . . .  Lyngby Radio, Denmark
Schedule type  . . . . .  Continuous
Channel  . . . . . . . . .  9 frequencies in the range of 4211.0 - 12601.5 kHz
Start time  . . . . . . . .  0000 (hhmm)
Stop time  . . . . . . . .  2400 (hhmm)
Date  . . . . . . . . . . . .
Selective FEC RX . . .  YES
Broadcast FEC RX  . .  YES

      Note:    Channel and FEC settings are attached to the station.
               Changes in these fields affect all scanning of the station.

                      F2 Save        F7 View

         The modem is scanning 9 frequencies in 27.0 seconds
```

The scan form consists of the following fields:

Station   Selects station to be scanned. On the selection list, acquired by pressing *F1 Modify field*, *F2* toggles between a list of coast stations and a list of subscribers.

Schedule   Selects between the three different types of schedules
                    described above.

Channel   Selects frequencies to be scanned.

Start time   Dependent on the schedule type, time and date
Stop time   fields can be set.
Date

Selective   Permits the reception of selective FEC transmissions
FEC RX   from the selected station.

Broadcast   Permits the reception of broadcast FEC transmissions
FEC RX   from the selected station.

Note: Changes in the 'Channel', 'Selective FEC RX', and 'Broad-
                    cast FEC RX' fields affect all scanning of the station in
                    question. The data of these fields are connected to the
                    station – not the scan itself.

                    The selected frequencies will be the only ones available
                    when setting up a transmission using the selected station.

For help, press *shift-F1* or *F11* in the relevant field.

To save a scan
press F2.

If a scan that has just been set up is not going to be changed, it is advisable
to save the scan on the backup diskette (see 'Making a backup').

Maximum number of frequencies to be scanned
Radiotelex is capable of scanning up to about 18 frequencies.

A telex call lasts 56 seconds. It takes at least 3 seconds to scan one frequency.
This means that during 56 seconds, about 18 frequencies may be scanned.
If this number is exceeded, the consequence may be a missed transmission.

If it takes more than 56 seconds to scan the number of frequencies you want,
Radiotelex will recommend that you reduce the number of scanned frequen-
cies.

Examples of scanning

Setting up 24-hours-a-day scan of coast station

Station	Select coast station to be scanned.
Schedule	Select continuous schedule.
Channel	Select frequencies to be scanned.
Start time	
Stop time	
Date	
Selective FEC RX	Select YES.
Broadcast FEC RX	Select YES.

Press *F2* **Save** to activate the scan.

Setting up scan for news or traffic Lists

Station	Select coast station to be scanned.
Schedule	Select periodic schedule.
Channel	Select frequencies to be scanned.
Start time	Set to 5 minutes before coast station transmission start time.
Stop time	Set to 5 minutes after coast station transmission start time.
Date	
Selective FEC RX	Set to NO.
Broadcast FEC RX	Set to YES.

Press *F2* **Save** to activate the scan.

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
 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 sub-
scriber 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 partThese 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.

2.8   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 scan 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.

Current scanning
lists scanned frequencies. The frequency list shows the frequencies in the succession they are scanned. The frequency being scanned currently is at the top. The list is updated dynamically.

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.

Coast station map
displays a world map showing coast stations. In FEC a subscriber map is shown.

2.9   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.

When Radiotelex is communicating, distress mode cannot be entered. Break the connection first, then select distress mode. Or more likely, just make the

DSC distress call and Radiotelex will stop communicating since DSC has priority.

```
_____ DISTRESS MODE: Press Alt-D to exit distress mode _____
┌──────────────────────────────────────────────────────────────┐
│  RADIOTLX              M/S ULYSSES            Monday 13/9-96  13:56 │
├──────────────────────────────────────────────────────────────┤
│                        FEC TERMINAL                            │
├──────────────────────────────────────────────────────────────┤
│                                                                │
│                                                                │
│                                                                │
│                                                                │
│                                                                │
│                                                                │
│                                                                │
│                                                                │
├──────────────────────────────────────────────────────────────┤
│  F2 TX FEC   F3 TX ARQ   F4 Scan/Frq   F5 Message   F7 View   │
├──────────────────────────────────────────────────────────────┤
│  The modem is listening to a single frequency for FEC and ARQ │
└──────────────────────────────────────────────────────────────┘
```

When entering distress mode, all scans and transmissions set up outside distress mode are disabled. That is because distress mode is a special shell disclosing all other activities – only the distress activity takes place. All communication is both printed and logged no matter what the setup is like outside distress mode. Also, the retry schedule is disabled. However, the TELEX (ARQ) terminal and the FEC terminal are used even in distress mode. The same goes for 'Message handling', which is not affected either.

When exiting distress mode, schedules (scans and transmissions) set up outside distress mode are restored.

Distress mode

To enter distress mode
- press *Alt-D* (anywhere)
  or:
- press *F2* (in the TELEX or FEC terminals)

Note:
Distress may only be used when *your* ship is in distress. If participating in another ship's distress communication, do not enter distress mode but use the normal facilities.

To exit distress mode press *Alt-D.*

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**.

To see the current frequency
select:
1. *F7* **View**
2. *F4* **Current scanning**

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

```
_____ DISTRESS MODE: Press Alt-D to exit distress mode _____
     RADIOTLX              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**, **Current scanning**, 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.

2.10   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.

The modem is listening to a single frequency for free signal
A transmission has been initiated and sent from the computer to the modem.
All continuous and periodic scans are superseded by this call. The modem is
listening to one single frequency for a free signal.

The modem is scanning z frequencies for a free signal in x.y seconds
A transmission has been initiated and sent from the computer to the modem.
All continuous and periodic scans are superseded by this call. The modem is
scanning for a free signal using x.y seconds to scan the z frequencies.

Modem is calling ...
If Radiotelex is calling a coast station, a free signal has been detected, and
Radiotelex has progressed to calling the coast station. If the call is made to
a ship, Radiotelex calls right after the operator has initiated the transmission
by pressing *F2* in one of the transmission forms.

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 communica-
tion 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 Scan Control
Scanning has been disabled by the scan control function. Scanning can be enabled again in the terminal function *F4* **Scan**. 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.

The modem is scanning z frequencies in x.y seconds
Listening for traffic on z frequencies using x.y seconds to scan all of the z frequencies.

Reduce number of scanned frequencies (currently z) !
A call to a station lasts about 56 seconds. Generally, it takes about 3 seconds to scan a frequency, including tuning. This means that you can scan a maximum of 18 frequencies without risking missing a call. Therefore, in order to be sure not to miss a transmission to be received, the above status message informs you that the number of scanned frequencies should be reduced.

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.

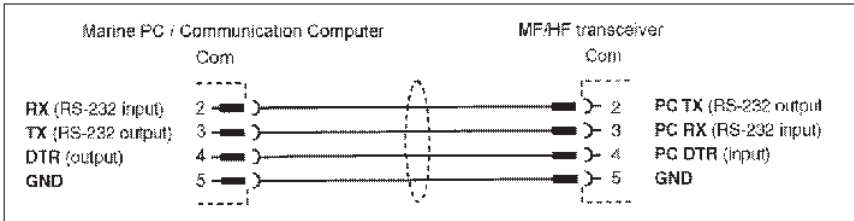**The modem is listening to a single frequency for FEC and ARQ**
In distress mode, Radiotelex listens for both FEC and ARQ traffic automatically.

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 exitting 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 exitting 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	

F10 Return to DOS

F1 Install RADIOTLX version 2.20
F2 Change RADIOTLX home from C:\RADIOTLX
F3 Change RADIOTLX.EXE directory from C:\RADIOTLX

Press F11 or Shift-F1 at any time to get help

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 pg
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 com-
                              puter without an attached modem. The mo-
                              dem software must be 2.8.0 or later, prefer-
                              ably 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 (AAIC)  ...........
 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 specied, 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*.