WaveMail

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This version of the user guide is valid for
WaveMail version 1.08 and higher

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WaveMail User Guide

1. Overview

WaveMail is an e-mail software which is optimized for efficient messaging over radio modems, Inmarsat telephones and ordinary telephone modems.

WaveMail lets you create, send/receive and manage messages and binary attachments. Messages can be sent or received to/from other WaveMail stations or to/from the Internet (if the WaveNet Internet Gateway has been installed in your WaveMail network). The flexible structure of WaveMail allows the integration of Gateways to other e-mail systems.

Swiss-PTC Pactor modems, Packet Radio modems, Inmarsat terminals or any AT-compatible telephone modems can be used to exchange messages between WaveMail stations. Messages can be addressed to several recipients. WaveMail takes care of automatic forwarding.

Every WaveMail station is identified by a Station-ID. The Station-ID is used to address messages and to establish links between stations. Messages can be addressed to a station or to a particular person (user) on a station.

WaveMail uses very efficient methods for message transfers and allows efficient messaging over inexpensive radio links. This saves money and time.
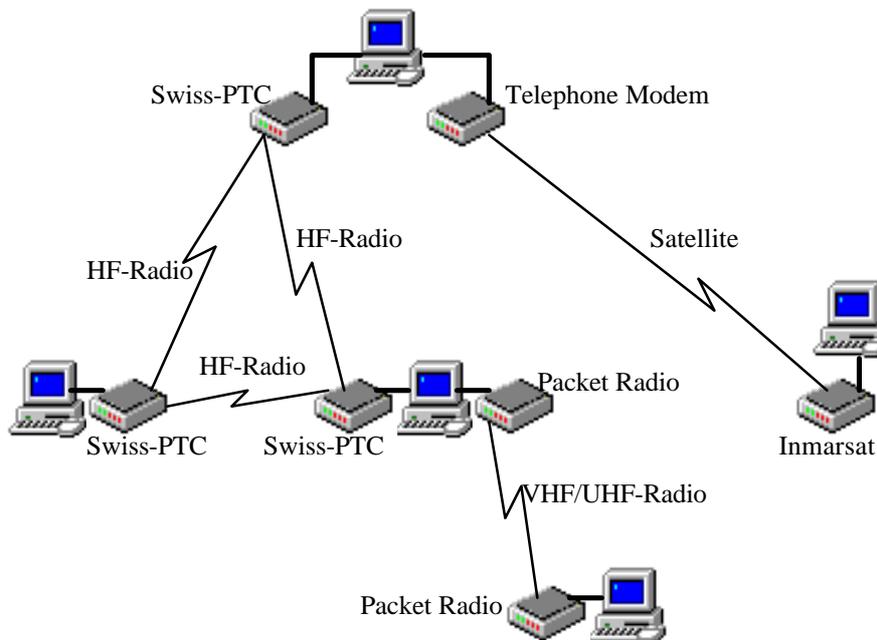
Example of a small WaveMail network

2. First Steps

2.1. System Requirements
PC with Windows 3.1x / Windows 95 / Windows 98 / Windows NT 4.0
80486 processor or better (works even with 80386, but that is a little slow)
8 MB RAM or more recommended

2.2. Installation
1. Insert WaveMail Diskette Nr 1 into the diskette drive.
2. Start the SETUP.EXE installation program on the diskette (from Windows File Manager / Win95/98/NT Explorer or from the Windows RUN dialog) and follow instructions.
3. After the installation is complete you can start WaveMail.

2.3. Start WaveMail
- Doubleclick on WaveMail in the WaveMail program group
    or
- use the START button in Win95/98/NT then go to Programs, then WaveMail, then click on WaveMail.

2.4. Help
Use function key F1 to get context sensitive help information in WaveMail.

2.5. Setup

2.5.1. Before you begin

Before you setup a station, you should

!

- select a **Station-ID** for that station. The Station-ID identifies a station within a WaveMail network. It is used to address messages and to establish connections. As an example you may use the name or abbreviation of the city where your station is operating (max 11 characters). . Valid characters are: 'A' - 'Z' , '0' - '9' , and '_'. The Station-ID is not case sensitive.
- obtain the **License Code** (software protection) from the supplier of WaveMail. You have to communicate the Station-ID to obtain the License Code, because the License Code is related to the Station-ID.

2.5.2. Minimum Setup

Select <u>Station Setup</u> from the Setup menu to
- enter the **Station-ID**
- enter the **License Code**
- add a **Modem**

Select <u>Network Setup</u> from the Setup menu to
- define at least one **Link** to another WaveMail station

2.5.3. More about Setup

☞ | The section **'Step-by-Step Setup Examples'** in **chapter 'Advanced Setup'** will help you to understand how to setup WaveMail.

More detailed informations about Setup can be found in **chapter 'Advanced Setup'.**

3. Routine Operation

3.1. POSTMASTER and Normal Users

The POSTMASTER is a user with special rights. Only the postmaster can change the Station Setup and Network Setup. If no users are defined on a WaveMail station, the only user is automatically the postmaster.

3.2. Start

Connect the modem(s) and switch it/them on before starting WaveMail

After you start WaveMail, the program will initialize the modem(s). This operation may take several seconds for every modem.

After that, you will either see the main screen or the 'Username and Password' dialog. In the latter case you have to enter your username and password to get access to your messages. (The 'Username and Password' dialog will only appear if a POSTMASTER or several users have been defined on a station.)

3.3. WaveMail Screen

The WaveMail screen is divided into the following areas:

Folder selection   Toolbar   Message list

Modem status   Message preview

3.4. Creating a new Message

1. Create new message

Click on the New button of the toolbar to open a new message.

A new message appears.

2. Select recipient(s)

Click on the To button in the new message to open the addressbook.
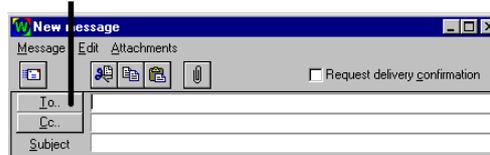
Select recipients from the addresslist on the left and use the To and Cc buttons to copy the recipients addresses to the To and Cc list on the right. Then click on OK to return to your new message. The selected addresses will be inserted into the To and Cc lines. For every recipient you will see the name and the e-mail address in angle brackets
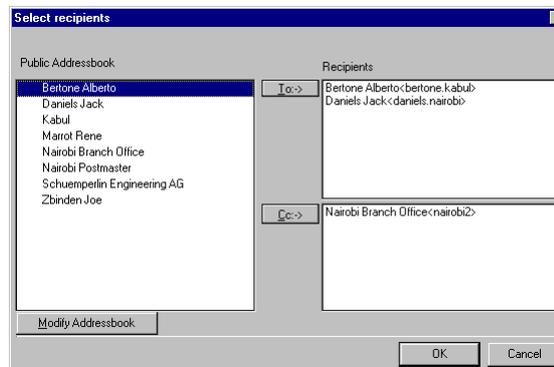
Use the Modify Addressbook button if the addressbook does not yet contain the desired recipient(s).

You can also enter the recipients address(es) directly into the To or Cc lines of the new message. Multiple addresses must be separated by a semicolon ';'.

3. Enter subject and text

Enter text and subject.

You can also import text from a plain text file. Use Import Text from File from the Edit menu or use the button. (TO:, CC: or SUBJECT: headers are copied to the respective fields of the new message if found in the first lines of the imported text.)
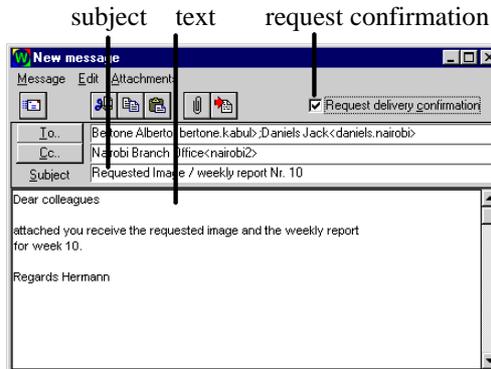
You can optionally request a delivery confirmation. You will then be notified, after the message has been delivered to the recipient(s). Messages addressed to the Internet may not return a delivery notification because this depends on the e-mail software of the recipient.

If a message can not be delivered (e.g. bad address) you will get a non-delivery notification independent of whether you have requested a delivery confirmation or not.

4. Add Attachments (optional)

You can attach any type of files (e.g. spreadsheets, pictures, text documents...).

Press the button or use the Attachments menu to add attachments.
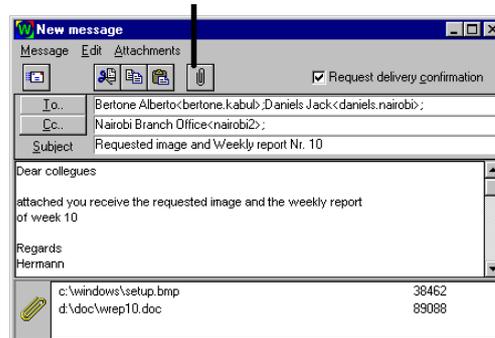
You can also use the drag&drop method to drag files from the Windows File Manager or Explorer and to drop them on the new message. If you use this method under Win95, then long filenames will be preserved.

Name and size of attachments are listed at the bottom of the message. Doubleclick on an attachment to open the 'Attachments' dialog that lets you remove or add more attachments.

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5. Send the Message

Press the Send button on the
toolbar or select Send from the
Message menu to submit the
message for sending.
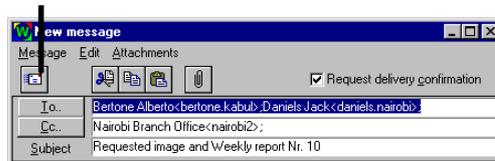
You can now find this message in the **OUT** folder. After the message has been sent,
it will move to the **SENT** folder.

Notes:
- When you submit the message for sending, the message is stored in the outgoing queue. At what
time the message will be sent to the destination station(s) or to the next station(s) on the route
depends on the Network Setup of your station.
- The message and attachments are automatically compressed when sending. This saves
transmission time. The message is automatically decompressed on the recipients side.

3.5. Sending and Receiving Messages

After you create a message, the message is not immediately sent. The message will be
sent the next time a link is established to the destination station(s) or to the
forwarding station(s).

You can manually establish a link by activating the Send+Receive button on the
toolbar or by selecting Send+Receive from the Connection menu. If more than one
link has been defined in the Network Setup, the 'Select Link' dialog appears to let
you select the desired link.

WaveMail can be configured to automatically establish links on regular intervals, on
predetermined times or when messages are in the queue (see Network Setup)

After the connection has been established, WaveMail performs the login procedure
and exchanges messages and notifications between the two stations. This is only
possible if both stations are correctly configured (a link between the two stations has
to be defined on both stations, and passwords must match).

3.6. Folders and Message List

Messages are organized in folders. 5 folders are always available. You can add additional folders.

- Received messages   Contains received messages.
- Out messages   Messages that have been queued for sending and have not yet been sent to all destinations.
- Sent messages   Messages that have been sent (if a message is addressed to a station that can not be connected directly, the message is moved from the Out folder to the Sent folder after the message has been sent to the next station on the route, not when it has been delivered)
- Draft messages   When creating a message you can save it in the Draft folder if you want to edit the message before sending
- Deleted messages   Contains deleted messages.

3.6.1. Selecting a Folder

Use the Folder Selection drop-down-list to select the desired folder for display.

3.6.2. Sorting Messages

Click on a column header to sort the message list by the desired column. Click again to revert the sort order.
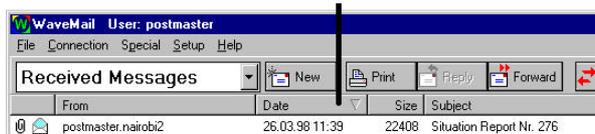
3.6.3. Symbols in the Message List

Used symbols:

	Unread message. The symbol will change to the 'Read message' symbol after you doubleclick on the message.
	Message has been read
	Message has attachment(s)
✓	Delivery notification
↰	Non-Delivery notification
?	A red question mark next to the envelope marks a sent message, for which a nondelivery notification has been received (message could not be delivered to one or several recipients). Select the message and press 'S' to get the status information for every recipient.

3.7. Viewing and Managing Messages

The text of the currently selected message is displayed in the preview window.
Doubleclick on the desired message on the message list to open the full message (including attachments) for viewing.

3.7.1. Viewing a Message

Doubleclick on the desired message on the message list to open a message.

Attachments:
Doubleclick on an attachment to see the popup menu that lets you Open/Run or Save attachments
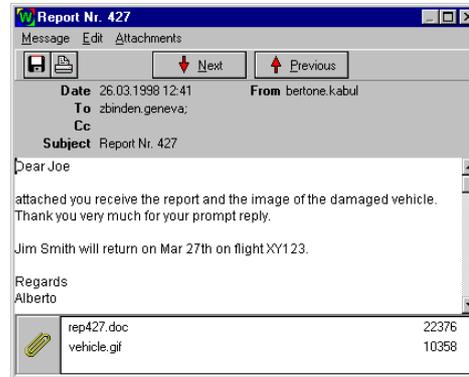
3.7.2. Printing Messages

Select one or several messages in the message list and click on the Print button of the toolbar. If you have opened the message for viewing, you can click on the Print symbol on the message windows toolbar. (You can setup WaveMail to automatically print incoming/outgoing messages. See menu Setup)

3.7.3. Responding to a Message

Select the desired message in the message list and click on the Reply button of the toolbar. A new message is created and the senders address of the original message is automatically inserted in the To field.
The original text is copied to the new message and original lines are preceded by a '>' sign. You can select this text and delete it if you do not want to include the original message in the response.

3.7.4. Forwarding a Message

Select the desired message in the message list and click on the Forward button of the toolbar. A copy of the message (including attachments) is created. You can then select recipients and edit the message before sending it.

3.7.5. Deleting Messages

1. Select one or several messages in the message list
2. Press the DELETE key   or   select Delete Messages from the File menu
If you delete a message in any folder except the 'Deleted Messages' folder, the message is moved to the 'Deleted Messages' folder. You can recover the message by

selecting the desired message(s) in the 'Deleted Messages' folder and selecting the Move Messages function from the File menu.
After a message is deleted from the 'Deleted Messages' folder, it can not be recovered.
Tips:
Selecting several messages in sequence:
    1. Click on the first message
    2. Press and hold down Shift while you click the last message of the group
Selecting several messages out of sequence:
    1. Press and hold down the Ctrl key while you click each message

From time to time you should use the Compress Folders function from the Folders submenu of the File menu. This function reclaims space released by deleted messages. This procedure may take several seconds.

3.7.6. Moving Messages

1. Select one or several messages in the message list
2. Use Move Message(s) to.. from the File menu to select the desired folder.

3.7.7. Popup Menu

Right-click in the message list to open the popup menu for quick access to message-management functions.

```
Open
Print

Reply to Sender
Forward

Mark as Read
Mark as Unread
Show Status

Save as...
Move to          ▶
Delete
```

3.8. Logout
If a POSTMASTER or several users have been defined on a station (see Station Setup), then you had to enter username and password to access your messages. In this case you should use Logout from the File menu to prevent other persons from accessing your messages while you are out to lunch.

After Logout, WaveMail can still send, receive and forward messages. It is also possible to communicate with other WaveMail stations in Chat mode without logging in.

4. Modem Status Window

The Modem Status Window shows one line for every connected modem.

Modem	Call / Nr	Station	Status	Estimated
SWISS-PTC	SEAFKAB	KABUL	RX 3 of 3 63% 518 bps	01:25
Packet WA8DED			standby	

4.1. Description of status display

Column	Description
Modem	Name of modem. Corresponds to the name in the Station Setup.
Call / Nr	Callsign of connected radio modem (Swiss-PTC or Packet Radio modem) or phone number of called telephone modem
Station	Station-ID of connected station
Status	Status of the link For SWISS-PTC modems, the status is followed by an asterisk '*' if the channel seems busy. For SWISS-PTC modems, the status is followed by **[P]** if the modem is in Public Mode .
Estimated	Estimated time that remains until all messages are received or until all messages are sent. This value is only shown after about 20 to 30 seconds in order to give a better estimation ('??:??' is displayed during the first 20 seconds of a transfer).

Status	Description
standby	no activity
answering call	WaveMail is answering an incoming call (establishing the connection) on a telephone type modem
connecting	establishing a connection
connected	modem is connected
command mode	WaveMail is waiting for the next command from the remote station
login requested	WaveMail has sent a login request to the remote station and is exchanging credentials
wait login data	WaveMail is waiting for login data from the remote station
messages requested	WaveMail has asked the remote station to send messages

TX	WaveMail is sending messages. The net average bit rate is displayed in bps or kbps. Because the displayed number is the net bit rate (does not include protocol overhead), it is lower than the effective number of bits transferred.
RX	WaveMail is receiving messages
chat requested	WaveMail is requesting an online dialog (chat mode)
terminal mode	WaveMail is in chat mode (online dialog)
disconnecting	ending connection
set channel	WaveMail is setting the channel in the transceiver (only if transceiver control is enabled, and only for Swiss-PTC modems)
test channel free	After setting the channel, WaveMail needs a few seconds to test whether the channel is free (only for Swiss-PTC modems)

4.2. Popup menu with modem functions

Select a modem in the modem status window by clicking the modem. Then rigth-click in the modem status window to open the popup menu.

Show Chat Window
Displays the Chat Window of the selected modem. This may be useful to review an online dialog after you have been communicating in chat mode with another station. You should limit the use of Chat Mode to a minimum possible, because chat mode is inefficient compared to messaging.

Disconnect
End the connection on the selected modem.

Force Standby
You should only use this function in special cases. Force Standby cuts the connection immediately, but the radio modem on the other side may keep on sending for a while because no proper disconnect has been made.

Reopen Modem
Reinitialize the modem and the serial port. This may be useful if the modem behaves in a strange way.

5. Menu Functions

Some functions are only enabled if a user is logged in, some are only enabled if the Postmaster is logged in.

5.1. File Menu

Many of the File menu functions operate on the selected message(s).
Tips:
Selecting several messages in sequence:
   1. Click on the first message
   2. Press and hold down Shift while you click the last message of the group
Selecting several messages out of sequence:
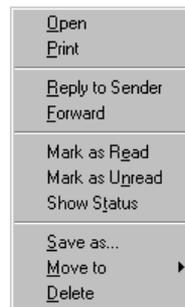   1. Press and hold down the Ctrl key while you click each message

Many of the functions in the File menu are also available in the popup menu that you can open by right-clicking on the message list.

5.1.1. New Message

Create a new message. Only one new message can be open at a time.

5.1.2. View Message

Open the selcted message for viewing. It is usually more convenient to doubleclick on the selected message or to press the Enter key.

5.1.3. Edit Message

This function is only available if a message in the 'Draft Messages' folder is selected. Edit Message opens a message for editing.

5.1.4. Print Message(s)

Print selected messages. The character font used to print can be changed with the Font function of the Setup menu. Messages are printed on the printer that has been installed in Windows as the default printer. A quicker way to print is to use the Print button of the toolbar. It is also possible to let WaveMail automatically print incoming or outgoing messages (use the Automatic Printing function of the Setup menu).

5.1.5. Move Message(s)

Move selected message(s) to another folder. This might be used to move messages to a folder that you created.

5.1.6. Delete Message(s)

Delete selected message(s). If you delete a message in any folder except the 'Deleted Messages' folder, the message is moved to the 'Deleted Messages' folder. You can recover the message by selecting the desired message(s) in the 'Deleted Messages' folder and selecting the Move Messages function from the File menu.
After a message is deleted from the 'Deleted Messages' folder, it can not be recovered.

A quicker way to delete the selected message(s) is the Delete key.

5.1.7. Folders / New Folder

Create a new Folder with a name of your choice. This may help to organize your messages.

5.1.8. Folders / Delete Folder

Delete a folder. Only folders that you have created can be deleted. The 5 standard folders cannot be deleted. A folder must be empty before it can be deleted.

5.1.9. Folders / Compress Folders

Messages are saved in a database. The disk space used for a message is not freed when you delete the message. Therefore you should use this function from time to time to reclaim wasted disk space. This procedure may take several seconds.

5.1.10. Addressbook

If you are the POSTMASTER, this function lets you edit the 'Public Addressbook' of a WaveMail station. The 'Public Addressbook' is available to all users of a station, but only the POSTMASTER can change it.
Normal users can modify their 'Personal Addressbook' with this function.

5.1.11. Logout

This function is only available if a POSTMASTER or several users have been defined on a station (see Station Setup). You can logout to prevent other persons from accessing your messages while you are out to lunch. The POSTMASTER may logout to prevent other persons from changing Station Setup or Network Setup.
After Logout, WaveMail can still send, receive and forward messages. It is also possible to communicate with other WaveMail stations in Chat mode without logging in.

5.1.12. Exit

Stop WaveMail. WaveMail attempts to disconnect all links before exiting.

5.2. Connection Menu

5.2.1. Send + Receive Messages

Exchange messages with a remote station. If only one link is defined in the Network Setup, WaveMail will connect the station defined in this single link. If several links have been defined, you can select the desired link from a list.

You can only exchange messages with a remote station which has defined a link to your station in the remote stations Network Setup. If passwords are used on this link, passwords must match, otherwise a login error will result.

WaveMail will connect, exchange Station-ID and Password and then transfer the messages. First WaveMail sends messages to the other station. Then WaveMail receives messages from the other station. After that, WaveMail may exchange some notifications and then disconnect the link. Everything is fully automatic and needs no user intervention.

WaveMail always sends messages sorted by size. The shortest message is sent first, the biggest at the end.

You may sometimes wonder that WaveMail sends more messages than you created. Maybe another user on your station has created some messages or maybe your station is forwarding messages from other stations. The same is true for received messages, if your station receives 3 messages, this does not necessarily mean that all of them are for you.

You can use the button of the toolbar for the same operation.

It is possible to configure WaveMail so that this function is automatically executed at a regular interval, at certain times of the day or whenever messages are queued for sending, see Network Setup.

5.2.2. Send Messages

Same as Send+Receive Messages , but no messages are received.

5.2.3. Receive Messages

Same as Send+Receive Messages , but no messages are sent.

5.2.4. Chat

Establish a connection with another station and open a Chat Window to communicate in an online dialog. This may be helpful if you need an online dialog with the other person.

5.2.5. Disconnect

Select a modem in the Modem Status Window and then use this function to disconnect a link. This function is normally not used, because WaveMail will automatically disconnect after exchanging messages.

5.3. Special Menu

5.3.1. Show Connect Log

Open the Connect Log. The connect log shows a summary of the last 200 connections or connect attempts. The newest entry is always on top of the list.

Column	Description
Time	Date and time when connection was disconnected
Station	Station-ID of remote station
Modem	Modem used
Result	**OK**: everything went fine **connect failed**: connect attempt failed **channel busy**: channel was busy **remote busy**: remote modem was busy **failed**: link failure **login error**: wrong Station-ID or Password **timeout**: no response from remote station **manual disconnect**: message transfer was interrupted by manual intervention **auto-disconnect**: WaveMail disconnected because of no activity **transceiver control error**: no response from transceiver **protocol error**: error during message transfer
X	**X** indicates that the connection was established by this station. **1,2,3**... indicates that the connection was established by this station and the radio channel used. **-** indicates that the connection was established by the remote station.
Minutes	Duration of connection in minutes
Sent	Number of bytes sent and in brackets number of messages and notifications sent. The number of bytes indicates the net byte count of the compressed message(s).
Received	Number of bytes received and in brackets number of messages and notifications received. The number of bytes indicates the net byte count of the compressed message(s).

The entries in the Connect Log are also saved in a daily log file in the Log subdirectory of the WaveMail directory. A new file is created for every day. Log files are automatically deleted after 60 days. The log filenames are created after the following scheme: ddmmyyyy.WCL (example 09021998.WCL for 9th Feb. 1998). Columns in the log files are separated by Tab characters (decimal 9).

5.3.2. Show Queued Messages

Open the Queued Messages window. The Queued Messages window shows the list of messages queued for sending (if any).

Column	Description
Next station	destination station or next station in route of message
From	originator of message
Msg-Id	message-id of message
Queued	date and time the message was queued
Size	size in bytes of the (compressed) message

The same message (identical message-id) may appear multiple times if it is addressed to several recipients.
The list can be sorted by any column. Just click on a column header to sort the list. Click again to revert the sort order.

Redirect queued messages

The Redirect button is only visible if you are logged in as POSTMASTER.
Redirecting messages does not change the recipient(s), redirecting only changes the route the message(s) will take. This function is only needed on special circumstances.
If messages are in the queue for STATIONX and STATIONX is not working anymore, you might have an alternative station STATIONY in your network that would handle the forwarding of messages.
Select one of the messages queued for sending to STATIONX. Then activate the Redirect queued messages button. Select the desired station in the 'Redirect queued messages' dialog.
Note: You will probably never need this function, however it is available, just in case.

Delete message

The Delete button is only visible if you are logged in as POSTMASTER.
It should normally not be necessary to delete a message from the queue. However, in special cases it might be useful (e.g. if someone has sent a very large message which is now in the queue to be transmitted over a relatively slow link like a HF-radio link where it would block the channel for hours. In this case you might want to kill this message).

Note: To prevent from having very large messages block your transmission channels you can assign a maximum message size to every modem (see Station Setup).

5.3.3. Show Link Scheduler

WaveMail can be configured to automatically establish connections (links) with other WaveMail stations at regular intervals or at preprogrammed times, see Network Setup .

The Link Scheduler window gives an overview of configured links and schedules.

Column	Description
Linkname	Identifies a link by the name of the remote station and the modem used.
Last Attempt	Time when the last attempt to establish the link has been made. This field is empty if no schedule has been defined.
Next Attempt	Next time when WaveMail will try to establish the link, this is either the next scheduled time or the time an automatic retry is due. This column shows 'no schedule' if no schedules have been defined. An asterisk '*' in this column indicates that a link will be established when a message has been queued for sending.
Busy	YES indicates that a link is established or is being established.

If WaveMail fails to establish a link on the scheduled time, it will automatically retry after a preprogrammed interval. After 3 unsuccessful attempts (per channel) WaveMail gives up and will try to establish the link on the next scheduled time. The case where the channel, line or remote modem is busy is not counted as an attempt and WaveMail will keep on trying with short intervals.

5.3.4. Modem Functions - Show Chat Window

Displays the Chat Window of the selected modem. This may be useful to review an online dialog after you have been communicating in chat mode with another station. You should limit the use of Chat Mode to a minimum possible, because chat mode is inefficient compared to messaging.

5.3.5. Modem Functions - Force Standby

You should only use this function in special cases. Force Standby cuts the connection immediately, but the radio modem on the other side may keep on sending for a while because no proper disconnect has been made.

5.3.6. Modem Functions - Reopen Modem

Reinitialize the modem and the serial port. This may be useful if the modem behaves in a strange way.

5.4. Setup Menu

5.4.1. Font - Screen

Select the font used to display the message text on the screen. The font for text other than the message text cannot be changed.

5.4.2. Font - Printer

Select the font used for printing messages.

5.4.3. Automatic Printing

Select automatic printing options.
Messages are only printed automatically while the respective user (recipient/sender of the messages) is logged in. Messages are printed on the default printer.
These options are private to users and therefore each user can set different options.

5.4.4. Station Setup

The Station Setup function is only available for the POSTMASTER.
Use Station Setup to configure parameters for your WaveMail station. The following minimum informations are required before you can use WaveMail:
- enter the **Station-ID**
- enter the **License Code**
- add a **Modem**

see chapter **Advanced Setup** for more information

5.4.5. Network Setup

The Network Setup function is only available for the POSTMASTER.
Use Network Setup to define links (connections) with other WaveMail stations. The following minimum information is requeired before you can use WaveMail to exchange messages with another station:
- define at least one **Link** to another WaveMail station

see chapter **Advanced Setup** for more information

5.4.6. Show Parameters

This function is for information only. A summary of parameters is displayed for quick information.
see chapter **Advanced Setup** for more information

5.5. Popup Menu in Message List

Right-click in the message list to open the popup menu for quick access to message-management functions.

```
Open
Print

Reply to Sender
Forward

Mark as Read
Mark as Unread
Show Status

Save as...
Move to          ▶
Delete
```
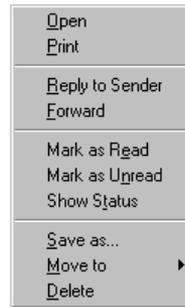
Most of these functions are self explaining or are explained in the section Viewing and Managing Messages.

5.5.1. Show Status - Message Status

Select a message of the OUT Messages or SENT Messages folder. Open the popup menu by right-clicking. Then select **Show Status** from the popup menu to display the status of the desired message.

The message status window displays the status for every recipient. If a delivery or a non-delivery notification has been received, the status of a message is updated and the notification is stored in your RECEIVED Messages folder.

Status	Description
queued	message is in the send queue
sent	message has been sent (either to the destination station or to the next station on the route to the destination station)
delivered	message has been delivered (this status is only available if a delivery confirmation has been requested when the message was created)
address unknown	address unknown
recipient unknown	the message has arrived at the destination station, but there is no recipient with this username at the destination station (the message is delivered to the POSTMASTER of the destination station)
deleted	the message has been removed from the send queue (on this station or on a station between this station and the destination station)
timeout	the message was not forwarded for more than 2 days (on this station or on a station between this station and the destination station)
msg too big	the message could not be sent, because it was bigger than the maximum specified in Station Setup / Modem properties

The Subject of the message is shown for reference. The message-id (Msg Id) is an internal identifier that uniquely identifies every single message.

6. Addressbook

The e-mail addresses of your contacts can be saved in the Addressbook. When you create a message, you can select recipients from the addressbook.

6.1. Public Addressbook and Personal Addressbook

The 'Public Addressbook' is maintained by the POSTMASTER and all users can use it when selecting recipients for a new message.

The 'Private Addressbook' is maintained by normal users and only the owner of a 'Private Addressbook' can use it when selecting recipients for a new message.

Normal users can only modify the 'Private Addressbook'. The 'Public Addressbook' can only be modified by the POSTMASTER.

6.2. Adding contacts to the Addressbook

Select Addressbook from the File menu to modify the addressbook. When you are selecting recipients for a new message (Select Recipients dialog), you can activate the Modify Addressbook to add new contacts to the addressbook.
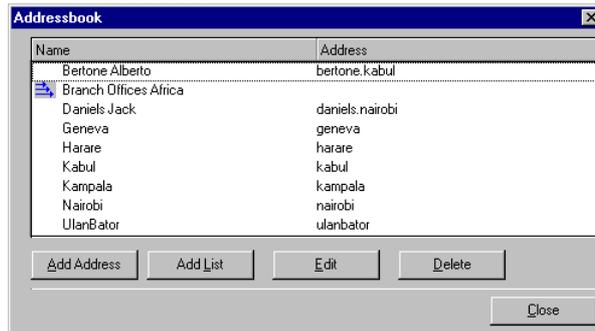
Use the following buttons in the addressbook:
 - Use Add Address to add a new address.
 - Use Add List to add an address list.
 - Use Edit to modify the selected address or address list.
 - Use Close to close the addressbook.

6.2.1. Enter name and address

After you select Add Address or Edit you will see the Address dialog.
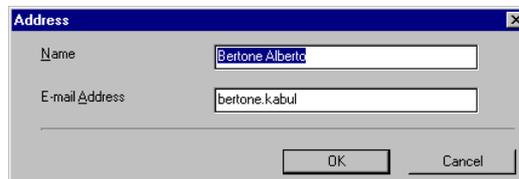
Name
You can enter any name. You may enter the last name first, in order to see the contacts sorted by lastname.
E-mail Address
Enter a valid e-mail address. See chapter 'E-mail Addresses in WaveMail' for details.

6.3. Addresslists

Addresslists contain a list of recipients. Addresslists are very convenient when you often have to send messages to the same group of persons. A message can be addressed to all members of an addresslist by a single mouseclick.

Use Add List in the addressbook to add an address list.

List name

An address list is identified by the list name. You can enter any name or description into this field.
Example: Branch Offices Africa

Recipients

The Recipients list on the right side contains the members of this addresslist. Select the desired recipients from the left list and click on the > button to include the selected recipients in your addresslist. Use the < button to remove members of your addresslist.
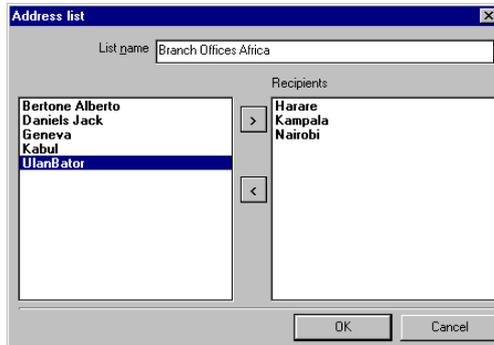
7. E-mail addresses in WaveMail

7.1. WaveMail address

A WaveMail address can consist of the Station-ID or a Username and the Station-ID. Username and Station-ID are separated by a period.
Examples:

```
nairobi
hermann_schuemperlin.nairobi
billclinton.washington
```

7.2. Other types of address

7.2.1. Internet address

Normal Internet e-mail addresses can be used when sending a message to an Internet recipient. WaveMail will automatically recognize Internet e-mail addresses and try to forward the message to a WaveNet gateway (WaveMail-Internet gateway) within your WaveMail network (of course you can only send messages to Internet recipients if a gateway is running in your WaveMail network and if you have the rights to send messages to Internet recipients).
Example:

```
hermann@schuemperlin.com
```

7.2.2. GLPLUS/RLPLUS address

You can address messages to stations that use GLPLUS or RLPLUS software. The address consists of the keyword 'GP:' and the call sign of the remote SWISS-PTC or Packet Radio modem.
Example:

```
GP:hb9cnm
```

see also section 'GLPLUS/RLPLUS Compatibility' in chapter 'Special Topics'.

8. Advanced Setup

8.1. Station Setup

Choose Station Setup from the Setup menu to change parameters of your WaveMail station.

The Station Setup can only be changed by the Postmaster.
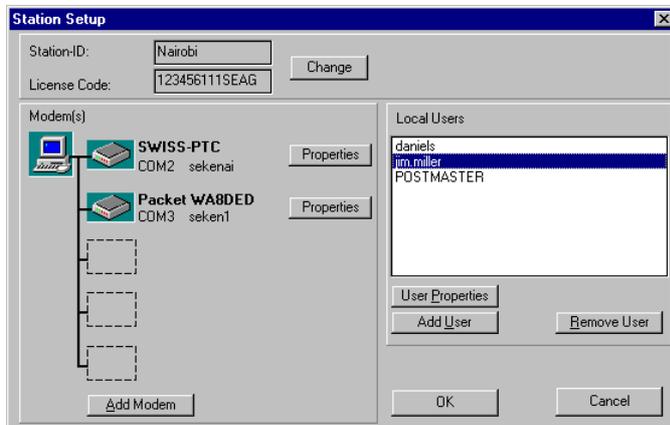
8.1.1. Station-ID

The Station-ID is used to identify a station in the network. Other stations will use your Station-ID to address messages to your station and to establish connections with your station.

The Station-ID must be a unique identifier, every station needs a different Station-ID. It is recommended to use a meaningful name, maybe the name of the city where you are located or a combination of abbreviations of your organizations name and the city name.

The Station-ID is limited to 11 characters. Valid characters are: 'A' - 'Z' , '0' - '9' , and '_'. The Station-ID is not case sensitive.

Examples:
```
Nairobi
US_Houston
```

8.1.2. License Code

The License Code is used to protect the WaveMail software from unauthorized use. This software has to be licensed for every station, this means an individual license is needed for every PC that has modems connected which are used by WaveMail.

You get the License Code from the supplier of this software. The License Code is related to the Station-ID. Therefore you have to pay the License Fee and to communicate your Station-ID and company name to the supplier of this software in order to get the License Code.

WaveMail can only be used after the correct License Code that corresponds to the Station-ID has been entered.

8.1.3. Modems

Up to 7 modems can be connected to a WaveMail station. In most cases you will only have one or two modems.

Use the Add Modem button to add a modem. You will then be asked what type of modem you want to add.
- All telephone modems with an AT-command set can be defined as Telephone Modem'.
- All SWISS-PTC modems (SWISS-PTC I, SWISS-PTC plus and SWISS-PTC II) can be defined as 'SWISS-PTC'
- Packet radio modems supporting WA8DED hostmode (including RDM-48) can be defined as 'Packet WA8DED'

After you select a modem type, the 'Modem Properties' dialog allows you to enter the properties for the modem.

8.1.4. Modem Properties

Use the Properties button next to the desired modem to change the properties of a modem.
Some of the fields of the 'Modem Properties' dialog are not visible for certain types of modems.
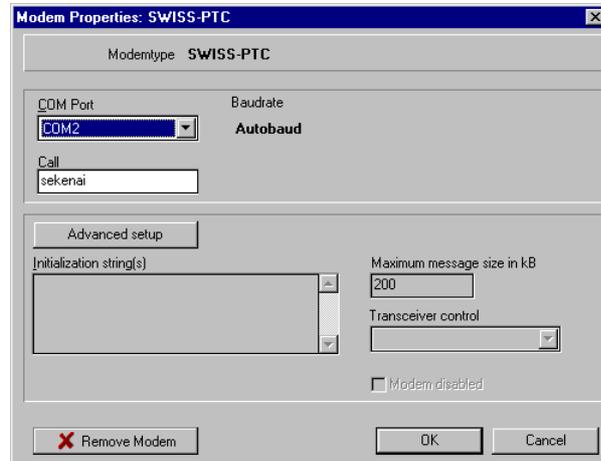
Com-Port
Select the COM port where the modem is connected.

Baudrate
Select the appropriate Baudrate for communications between the modem and the PC (this is NOT the over-air or line baudrate).
- The Baudrate does not have to be defined for SWISS-PTC Pactor modems (SWISS PTC 1 and SWISS PTC II) because WaveMail will automatically detect the correct baudrate.
- Telephone modems usually have an autobaud routine and accept many baudrates. Select a baudrate which is higher than the line speed.
- For Inmarsat terminals you should check the baudrate selected on the terminal.
- For Packet modems you have to specify the baudrate that has been selected in the modem. Use 9600 for the RDM 48 modem.

Call (for radio modems)
The Call (selcall) is needed for radio modems. WaveMail will automatically program the modem with the Call you define here. Remote stations must know your Call in order to establish a connection from the remote side.

Line Access (for telephone modems)
If your telephone modem is connected to a PBX, it will probably be necessary to dial a line access code and instruct the modem to wait with dialing the number until the external line is ready. Typical line access codes are 0w or 0,, .
Leave Line Access empty if the modem is directly connected to an external line.

Dialing (for telephone modems)
Select Tone dialing if possible, use Pulse dialing if Tone dialing does not work
(depends on telephone exchange).

Remove Modem
Click on the Remove Modem button to remove the modem from the setup.

Advanced Setup
Click on the Advanced Setup button to change any of the following properties:

Initialization string(s)
Normally everything should work fine without additional initialzation strings.
However there are cases where some special initialization is required. You can enter
several lines.
For SWISS-PTC modems: the first line must contain the 'LOCK 0 ' command

Examples: SWISS-PTC modem: Packet radio modem:
```
               LOCK  0                 P  128
               PSKA  280               @T2 20
               FSKA  200
```

Maximum message size in kB
You can define a maximum size for messages that may be sent over this modem. This
may help to prevent from exorbitant costs if an extremely large message has been sent
by accident. If this field is empty or '0' this is interpreted as 'unlimited'. The size is
always the size of the compressed message. A message which shows a size of 100kB
in your OUT Messages folder might have been compressed to 30 kB and will be
transmitted even if the limit has been set to 50kB.

Transceiver Control
This option is only applicable to SWISS-PTC modems. It is used to define the type of
radio used if WaveMail should automatically control the transceiver channel when
establishing connections.
Leave this field empty (select '--disabled--' from the list) if you only use a single
frequency.

Disabled
You can check the Disabled checkbox if you want to temporarily disable a modem
without completely removing it from the setup.

8.1.5. Local Users

Several local users can be defined. This allows to address messages to an individual
person.

- Select Add User to add a new user. The 'Username and Password' dialog appears and you can enter the Username and Password. The first registered user is always the POSTMASTER.
- Select User Properties to change the password of the selected user.
- Select Remove User to remove a user. This will also delete all mail of the removed user (except if WaveMail is running on a LAN and the user has his mail on his PC where WaveMail is running in Client mode).

Username and Password

Username	jim.miller
Password	****

OK   Cancel

Username
The username is used to login and to address messages to a specific user.
Valid characters are: 'A' - ' Z' , 'a' - 'z' , '0' - '9' , '-', '_', '.'
Maximum length: 40 characters
Examples:
```
        john-smith
        James007
        Hermann.Schuemperlin
```

Note: Usernames are not case sensitive. This means that 'Miller' and 'miller' is interpreted as the same user.

Password
The password is used to login.
Valid characters: all characters
Maximum length: 30 characters

Note: Passwords are not case sensitive.

8.2. Network Setup

The Network Setup can only be changed by the Postmaster.

8.2.1. Links

The **Links** page allows you to define links between your WaveMail station and other WaveMail stations. A link is characterized by:
- Station-ID of the remote station
- modem to be used (WaveMail can handle several modems)
- phone number / call of the remote station
- optionally a password
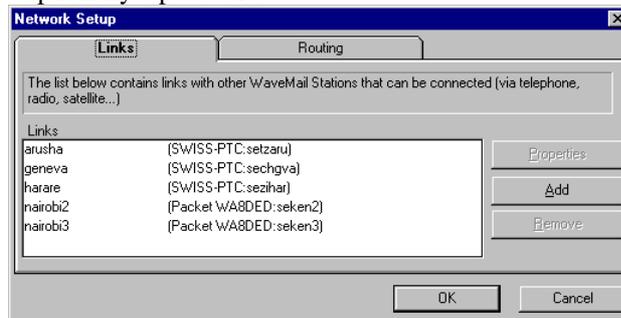
Activate the Add or Properties button to add/modify a link.

Important note:
- You can only exchange mail with remote stations after you have defined the parameters for the link to that station. You can only exchange mail with remote stations which have defined a link with your station. If a password has been assigned for a link, the password must be the same on both sides of the link.
- Chat connections (online dialog) are not protected, therefore you can chat with a remote station even if the remote station has not defined a link with your station or if the passwords do not match.

8.2.2. Link Properties
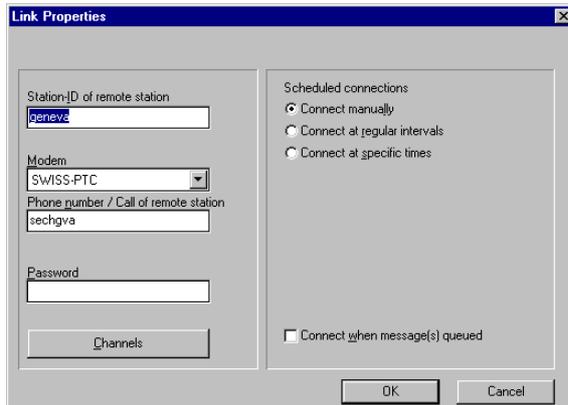
Messages can only be exchanged, if the remote station has defined a link with your station and if the passwords (if used) are the same.

Station-ID of remote station
Enter the Station-ID of the remote station. If you want to chat with a remote station which is not using WaveMail, you can enter any name as Station-ID, however you can only exchange messages with other WaveMail stations if you enter the correct Station-ID.
If you want to exchange messages with stations that are running the GLPLUS or RLPLUS software you must enter a special Station-ID of the form 'GP:*call*'' where *call* must be set to the call sign of the remote SWISS-PTC or Packet Radio modem, example: `GP:hb9cnm`.

Modem
Select the modem that should be used to establish a connection with the remote station. The remote station must have the same type of modem. A drop-down list lets you choose from the modem(s) defined in your Station Setup.

Phone number / Call of remote station
If you use a telephone modem or an Inmarsat terminal to connect to a remote station, then you have to enter the phone number of the remote station.
If you use a SWISS-PTC Pactor modem or a Packet Radio modem you have to enter the callsign of the remote station.
Notes:
- Callsign and Station-ID are two different things, however they may have the same value.
- To connect a SWISS-PTC modem in Longpath-Mode, the callsign must be preceded by a '!' sign
- To connect a SWISS-PTC modem in Public-Mode, the callsign should be preceded by a '+' sign.
  Example: `!hb9cnm`   connect hb9cnm in Longpath-Mode

Example: `+hb9cnm`   connect hb9cnm in Public-Mode
Example: `+!hb9cnm`   connect hb9cnm in Longpath and Public-Mode

Password
A link between two stations may be protected by a passsword. This is very useful in order to prevent from unauthorized intrusion into your messaging network.

Scheduled connections
You can configure WaveMail to automatically establish a link and exchange messages at regular intervals or at specific times.
If you select 'Connect at regular intervals', you can define the interval in minutes and the starttime in hours and minutes. The starttime allows you to arrange the connect times so that not all links will connect at the same time.
If you select 'Connect at specific times' you can enter a list of times in the hh:mm format (hours:minutes).

Connect when message(s) queued
If you check this box, WaveMail will automatically establish a connection on this link if a message is queued for the station defined in this link. If the a link has recently been active, WaveMail will not immediately reconnect. In this case WaveMail will only connect after a delay of one to several minutes.

Channels
This button is only visible if a SWISS-PTC is used on this link and if Transceiver Control has been defined for this modem (see also section 'Station Setup' and 'Modem Properties'). Use the Channels button to define the channel(s) to be used when establishing the connection.

On the left side of the dialog you may define up to 3 channels to be used when establishing a connection during the time specified in the **Between** / **And** fields. On the right side of the dialog you may define up to 3 channels for the rest of the day. This allows adaptation to changing propagation conditions.

WaveMail first attempts to connect on **1. Channel** . If the connection fails, WaveMail attempts to use the 2. and 3. channel (if defined). If still no connection is possible, WaveMail will retry several times (with a delay between attempts).

8.2.3. Routing

WaveMail may need some informations in order to find the route to deliver messages. WaveMail automatically forwards messages until they arrive at the destinations. If you have only one link defined, you can leave the 'Default Routing' field and 'Specific Routing' list empty because WaveMail will send all messages over that single link.
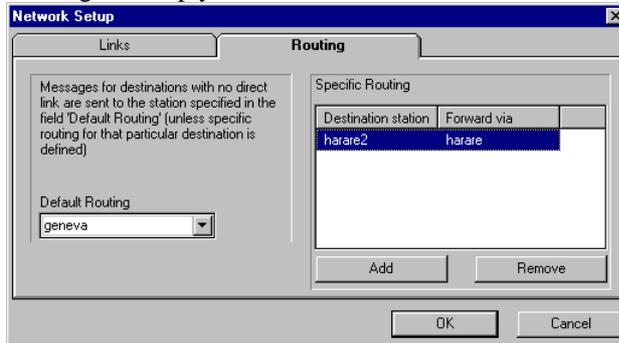
Default Routing

Messages for destinations with no direct link are sent to the station specified in the 'Default Routing' field (unless specific routing for that particular destination has been defined). WaveMail assumes, that the station that has been defined in the 'Default Routing' field will know how to forward messages. If you have only one link defined, you can leave this field empty and WaveMail will use this single link for default routing.

Specific Routing

You can specify a specific forwarding station for messages which are addressed to a certain destination station.

Use the Add and Remove buttons to add/remove specific routing informations.

Background information for better understanding:

If WaveMail has to forward a message to STATIONX it will use the following scheme to decide where to send the message next:

1. If a **Specific Routing** has been defined for STATIONX then WaveMail uses this routing information.
2. If a **Link** with station STATIONX is defined then WaveMail will forward the message over this link.
3. If neither 1 nor 2 are true, then WaveMail will forward the message to the station defined in the **Default Routing** field.
4. If no Default Routing is defined, WaveMail will return a 'Address Unknown Notification' to the originator of the message.

8.3. Transceiver Control

WaveMail supports automatic control of transceiver channels (channels not frequencies!) if a Swiss-PTC modem is used.

The following transceivers are supported as standard:
- Icom M-700 TY types with Scanner Control
- Barrett 950
- Codan 9360
- Use integrated Transceiver Control of Swiss-PTC-II (SWISS-PTC-II TRX-CONTROL)

Other transceivers are supported on request.

If you are using the integrated Transceiver Control of the Swiss-PTC-II, then you must program the channels and scan parameters in the Swiss-PTC-II. You can do this in SETUP / STATION SETUP / MODEM PROPERTIES. You have to add a few lines in the **Initialization String(s)** box. Example:

```
lock 0
trx ty r 9600
trx ch 1 14280.5
trx xscan 1 1
trx ch 2 7200.8
trx xscan 2 1
trx wait 10
trx dwell 30
trx scan 1
```

For details, contact Schuemperlin Engineering AG.

8.3.1. Setup for Transceiver Control

Before you can use Transceiver Control you have to perform the following tasks:

1. A control cable has to be connected between the Swiss-PTC modem and the transceivers control port.
2. Program the desired channels on the transceiver.
2. Station Setup: The appropriate transceiver type must be selected in the 'Transceiver Control' field of the 'Modem Properties' dialog of the Swiss-PTC modem.
3. Network Setup: Use the Channels button of the 'Link Properties' dialog to enter the desired channels for every link.

8.4. Step-by-Step Setup Examples

The following examples show a network that grows from a very simple 2 station network to a network with several stations and different types of modems.

Every station in a WaveMail network has to be identified by a **Station-ID**. The Station-ID is NOT the same as the callsign of a radio modem (however, they may have the same value). The Station-ID is used to establish links between stations and to address messages.

The organisation in this example has decided to use city names or abbreviations of city names as Station-IDs. The corresponding **License Codes** are obtained from the supplier of WaveMail.

In this example, callsigns for radio modems are organized as follows:

2 letter company code (**se** for setup example), followed by 2 letter country code, followed by 2-4 letters city code.

8.4.1. Minimum WaveMail Network with 2 Stations

This example shows a simple WaveMail network with 2 stations in Geneva and Nairobi using SWISS-PTC HF-radio modems.

The operators (POSTMASTER) in Geneva and Nairobi use the Station Setup function of the Setup menu to define Station-ID, License Code and Modem.
Then they use the Network Setup function of the Setup menu to define the parameters for the link to Geneva / Nairobi. **It is important to define the link on both stations of the link, otherwise a Login Error will occur when attempting to send/receive messages.**
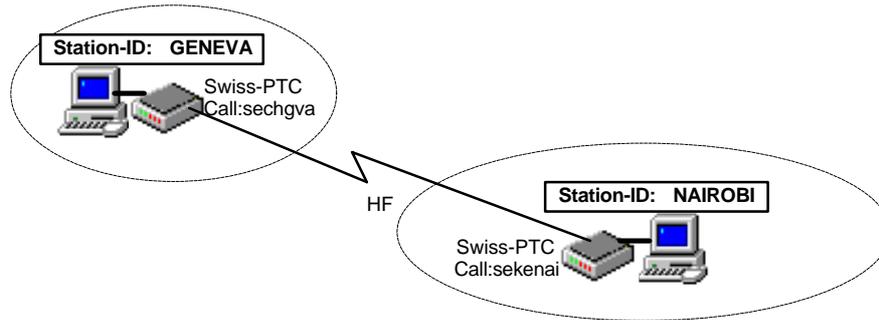
Simple network with 2 stations using Swiss-PTC modems.

Setup in Geneva

Station Setup		Network Setup	
Station-ID	= GENEVA	Add a link to Nairobi:	
License Code	= enter license code	Station-ID of remote stat. = NAIROBI	
Add a modem:		Modem	= SWISS-PTC
Modem type	= SWISS-PTC	Call of remote station	= sekenai
Call	= sechgva		

Setup in Nairobi

Station Setup		Network Setup	
Station-ID	= NAIROBI	Add a link to Geneva:	
License Code	= enter license code	Station-ID of remote stat. = GENEVA	
Add a modem:		Modem	= SWISS-PTC
Modem type	= SWISS-PTC	Call of remote station	= sechgva
Call	= sekenai		

No routing information is necessary in this example and the Routing page of the Network Setup on both WaveMail stations is empty.

8.4.2. A third Station joins the Network

A new station in Kabul joins the network. Kabul uses a Swiss-PTC modem.
The operator in Kabul uses the Station Setup function of the Setup menu to define Station-ID, License Code and Modem. Then he uses the Network Setup function of the Setup menu to define the parameters for the link to Geneva.
The operator in Geneva uses the Network Setup function of the Setup menu to define the parameters for the link to Kabul. **It is important to define the link on both stations of the link, otherwise a Login Error will occur when attempting to send/receive messages.**
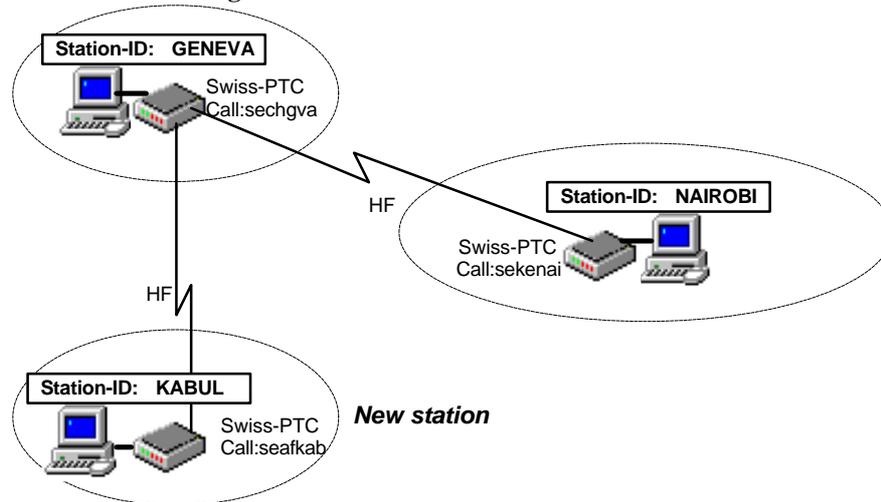
Setup in Kabul

Station Setup		Network Setup	
Station-ID	= KABUL	Add a link to Geneva:	
License Code	= enter license code	Station-ID of remote stat. = GENEVA	
Add a modem:		Modem	= SWISS-PTC
Modem type	= SWISS-PTC	Call of remote station	= sechgva
Call	= seafkab		

Setup in Geneva

Station Setup	Network Setup	
no change	Add a link to Kabul:	
	Station-ID of remote stat. = KABUL	
	Modem	= SWISS-PTC
	Call of remote station	= seafkab

A direct link between Kabul and Nairobi could also be defined. However, in our example this is not done, and all messages between Kabul and Nairobi are transferred via Geneva (automatic Store-and-Forward in Geneva).

8.4.3. A Station with a different Modem joins the Network

A new station in Nairobi joins the network. The Station-ID NAIROBI2 is assigned to this station. Because the two stations in Nairobi are within a relatively short distance, Packet Radio modems on VHF or UHF are used to connect NAIROBI2 and NAIROBI.
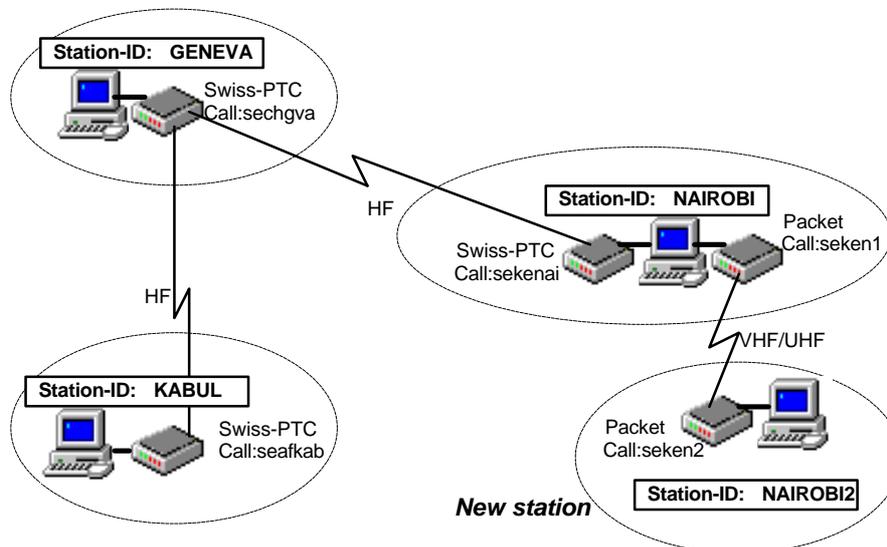
Setup at NAIROBI2

Station Setup		**Network Setup**	
Station-ID	= NAIROBI2	Add a link to NAIROBI:	
License Code	= enter license code	Station-ID of remote stat. = NAIROBI	
Add a modem:		Modem	= Packet WA8DED
Modem type	= Packet WA8DED	Call of remote station	= seken1
Call	= seken2		

Setup at NAIROBI

Station Setup		**Network Setup**	
		Add a link to NAIROBI2:	
Add a modem:		Station-ID of remote stat. = NAIROBI2	
Modem type	= Packet WA8DED	Modem	= Packet WA8DED
Call	= seken1	Call of remote station	= seken2

As the network gets more complex, WaveMail needs some routing informations. Imagine that KABUL writes a message for NAIROBI2. The WaveMail station in Kabul will forward the message to Geneva, because there is no other choice (only 1 link defined). Now the WaveMail station in Geneva is having a problem:

to which station should Geneva forward a message for NAIROBI2 ?

Therefore the operator in Geneva uses the Network Setup function of the Setup menu to define routing information for messages destined to NAIROBI2. He clicks on the Routing page of the Network Setup dialog. Then he activates the Add button and enters the routing information.

Setup in Geneva

Station Setup	Network Setup
no change	Add specific routing for NAIROBI2:
	Destination station = NAIROBI2
	Forward via = NAIROBI

As the station NAIROBI now has 2 links, this WaveMail station is also having a problem:
to which station should NAIROBI forward a message for KABUL?

The operator in Nairobi could add specific routing information for messages destined for Kabul. However, there is another possibility. The operator at the NAIROBI station can use the the Routing page of the Network Setup dialog to define a Default Routing station. He selects GENEVA as the Default Routing station, because Geneva is the central station of this growing network. This solution has the advantage, that Nairobi does not have to update the routing information for every new station in the network. WaveMail assumes that the station defined as Default Routing station knows how to forward messages.

Setup at NAIROBI

	Network Setup
	Define Default Routing:
	Default Routing = GENEVA

8.4.4. WaveNet Internet Gateway

The WaveMail network in our example is now enhanced by a WaveNet gateway to the Internet. The gateway is installed at the WaveMail station in Geneva. See the WaveNet User Guide for installation informations.

Now messages can be exchanged between the Internet and WaveMail, normal Internet e-mail addresses can be used. In our example a user at the NAIROBI2 station might address a message to `info@schuemperlin.com` .

WaveMail automatically interprets this address as an Internet e-mail address. The message will be forwarded to NAIROBI (this is the only link from NAIROBI2). NAIROBI will forward the message to GENEVA (Default Routing). WaveMail in GENEVA will forward the message to the WaveNet gateway where the FROM: address is mapped and the message is forwarded to the Internet.

Messages from the Internet are forwarded in the reverse order.

A message can be addressed to several recipients and a mixture of WaveMail and Internet destinations is possible. Attachments can also be sent/received to/from the Internet.

Depending on the setup of the WaveNet gateway, not all stations or users might have the right for Internet access.

9. Special Topics

9.1. POSTMASTER and Normal Users

9.1.1. POSTMASTER

The POSTMASTER is a user with special rights. The person who is in charge of managing the WaveMail station should be the POSTMASTER. On single user stations (no users defined) the only user is automatically the POSTMASTER.

Special POSTMASTER rights:
 - change the setup of the station (station setup and network setup)
 - modify public addressbook
 - redirect and delete messages from the message queue

Messages addressed to an unknown user on your WaveMail station will be delivered to the POSTMASTER.

9.1.2. Normal Users

Several local users can use WaveMail in a certain location. Messages can be addressed to an individual user. A user is identified by a username. Only the addressed user will have access to his messages.

There are two possibilities for local users:
1. There is only a single PC running WaveMail.
   Every user can use this single PC. He has to login on this PC before he can read/write messages. After he has read/written his mail, he will logout in order to prevent other users from reading his messages.
2. The PC running WaveMail is connected to a LAN.
   WaveMail can be installed on other PCs on the LAN in a special 'Client' mode. See chapter 'Installing WaveMail on a LAN. Local users can then read/write messages from their PC. Modems and connections can only be controlled from the PC with the modem(s).

9.1.3. Adding Users

Select Station Setup from the Setup menu to add users. WaveMail always makes sure, that the first user added is the POSTMASTER.

9.2. Delivery / Non-Delivery Notifications

WaveMail creates Non-Delivery Notifications to inform the sender of a message about delivery problems.

WaveMail can (optionally) create Delivery-Notifications to inform the sender of a message about the delivery of a message. Check the Request delivery confirmation checkbox while creating a message, if you want to receive a positive confirmation when the message has been delivered to the recipient(s). Note that negative notifications (e.g. unknown user, unknown station) are created regardless of the state of the Request delivery confirmation checkbox .

WaveMail displays received Notifications in the Received Messages folder. The status of the sent message in the OUT or SENT folder is also updated. Select a message in the OUT or SENT folder and press the 'S' key to view the status of a message (see section 'Show Status - Message Status' for more information).

Notifications contain the Message-ID of the referenced message, a code and some other information. When a notification is received, it is translated into text and the subject of the referenced message is retrieved from the OUT or SENT folder.

9.3. How WaveMail handles problem messages

9.3.1. Message addressed to an unknown station

If a message is addressed to an unknown station (or if there is a problem with routing informations on one of the station on the route), WaveMail returns a Non-Delivery notification to the sender, indicating which station was unable to forward the message.

9.3.2. Message addressed to an unknown user on a known station

WaveMail delivers the message to the Postmaster of the destination station and returns a Non-Delivery notification to the sender.

9.3.3. Message is not forwarded for more than 2 days

If a message was not forwarded for more than 2 days (on the senders station or on a station between the sender and the destination), WaveMail returns a Non-Delivery notification to the sender. However, the message remains in the queue for 7 days. Therefore it is still possible that the msg is forwarded after 2 days.

9.3.4. Message too big to forward

If a message is bigger (after compression) than the maximum size specified for a certain modem (and no alternative link is available), a non-delivery notification will be returned.

9.4. Installing WaveMail on a LAN

WaveMail can be used on a LAN. Users can then send and receive their messages from their workstation. However, modem related functions (see Connection and Special menu) are only available on the station that has the modems connected.

Note: For LAN operation you should use WaveMail version 1.08 or higher.
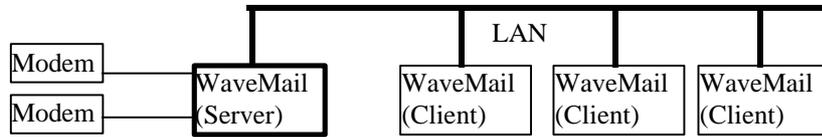
On the PC where the modem(s) is/are connected, WaveMail is running in Server-Mode (normal mode). On the other PCs WaveMail must be running in Client-Mode (see WAVEMAIL.SI below).

Installation of WaveMail server
1. Install WaveMail on the PC with the modems (WaveMail server).
2. Use Station Setup from the Setup menu to add local users.
3. Select the Show Parameters function from the Setup menu.
   In the section ------WaveMail Directory-------- you find the WaveMail Directory.

   Share two directories:
   a) The WaveMail directory must be set for Sharing (with read access). The
      Share-Name must be **WMSRV$** .
   b) The directory wavemail\user_trx\ directory must be set for Sharing (with
       read and write access). The Share-Name must be **WMTRX$** .

   example:
   C:\programs\wavemail\   share as **WMSRV$**   (read)
   C:\programs\wavemail\user_trx   share as **WMTRX$**   (read + write)
   (The Dollar-Sign at the end of the share-names makes these shared directories
   'invisible' to Windows-Explorer on other PCs on the LAN).

Installation of WaveMail client(s)
1. Install WaveMail on the users workstation (WaveMail client).

2. On the users workstation a file WAVEMAIL.SI must be created/edited.
   This file must be in the same directory where WAVEMAIL.EXE is (normally this
   is C:\programs\wavemail\program\ ). (A template file is available as
   WAVEMAIL.SI$. You can copy WAVEMAIL.SI$ to WAVEMAIL.SI and edit
   WAVEMAIL.SI.)
   Edit WAVEMAIL.SI as follows:

```
[SPECIAL]
MODE=CLIENT
WMSERVER=computername
```

where *computername* must be replaced by the name of the PC where WaveMail
is running in Server-Mode (PC where the modems are connected).

If WaveMail has to be installed on several client stations, the same
WAVEMAIL.SI file can be copied to all stations.

Comments on LAN operation of WaveMail:
- Use WaveMail version 1.08 or higher for LAN operation.
- The message database with a users messages is stored on the users local drive.
- If the LAN connection is 'down' when WaveMail is started, then WaveMail will
   operate in Offline-Mode. In this mode you have full access to the messages that you
   have received earlier. You can also create new messages. When you are
   reconnected to the LAN and after restarting WaveMail, the newly created messages
   will automatically be forwarded to WaveMail server for sending.
- While connected to the LAN, WaveMail client stations will periodically check
   whether there is new mail on the WaveMail server (every 30 seconds). If you have
   a bad LAN, WaveMail might 'freeze' while checking for new messages. (If the line
   OfflineTXRX=1 is added to the [SPECIAL] section of WAVEMAIL.SI, then
   WaveMail will only check for new mail after Send+Receive button has been
   pressed).
- A WaveMail User should always login from the same PC because his message
   database is stored on the local drive. (It is possible to tell WaveMail to store the
   message database of every user on the WaveMail server station. However this
   option has some disadvantages: no offline-operation possible, possibility of
   corruption of message database is increased because all databse operations must be
   performed over the LAN). If you really need the possibility to store the users
   message databases on the server, you should contact Schuemperlin Engineering AG
   for details).
- The POSTMASTER can only perform login on the PC where WaveMail runs in
   Server-mode.

9.5. Log files

9.5.1. Connect Log .WCL

WaveMail writes a summary of every connection to a daily log file in the Log subdirectory of the WaveMail directory. A new file is created for every day. Log files are automatically deleted after 60 days. The log filenames are created after the following scheme: ddmmyyyy.WCL (example 09021998.WCL for 9th Feb. 1998). Columns in the log files are separated by a Tab (decimal 9).

Column	Description
Time	Date and time when connection was disconnected
Station	Station-ID of remote station
Modem	Modem used
Result	**OK**: everything went fine **connect failed**: connect attempt failed **channel busy**: channel was busy **remote busy**: remote modem was busy **failed**: link failure **login error**: wrong Station-ID or Password **timeout**: no response from remote station **manual disconnect**: message transfer was interrupted by manual intervention **auto-disconnect**: WaveMail disconnected because of no activity **transceiver control error**: no response from transceiver **protocol error**: error during message transfer
X	**X** indicates that the connection was established by this station. **1,2,3**... indicates that the connection was established by this station and the radio channel used. **-** indicates that the connection was established by the remote station.
Minutes	Duration of connection in minutes
Sent	Number of bytes sent and in brackets number of messages and notifications sent. The number of bytes indicates the net byte count of the compressed message(s).
Received	Number of bytes received and in brackets number of messages and notifications received. The number of bytes indicates the net byte count of the compressed message(s).

9.5.2. Transmit (Send) Log .WTL

WaveMail writes a summary of every sent message to a daily log file in the Log subdirectory of the WaveMail directory. A new file is created for every day. Log files are automatically deleted after 60 days. The log filenames are created after the following scheme: ddmmyyyy.WTL (example 09021998.WTL for 9th Feb. 1998). Columns in the log files are separated by a Tab (decimal 9).

The .WTL log files contain the following columns:
  Date and Time
  Local Station-ID
  Remote Station-ID
  Direction (always TX)
  Size in bytes
  Transfer Duration in minutes
  Modem
  Originator of message
  Message-Id of message

9.5.3. Receive Log .WRL

WaveMail writes a summary of every received message to a daily log file in the Log subdirectory of the WaveMail directory. A new file is created for every day. Log files are automatically deleted after 60 days. The log filenames are created after the following scheme: ddmmyyyy.WRL (example 09021998.WRL for 9th Feb. 1998). Columns in the log files are separated by a Tab (decimal 9).

The .WRL log files contain the following columns:
  Date and Time
  Local Station-ID
  Remote Station-ID
  Direction (always RX)
  Size in bytes
  Transfer Duration in minutes
  Modem
  Originator of message
  Message-Id of message

9.6. GLPLUS / RLPLUS Compatibility

It is recommended to equip the complete network with the WaveMail software to take full advantage of all WaveMail features. However, if you wish to use GLPLUS or RLPLUS software on some of your stations (e.g. during the transition phase) you can do so.

9.6.1. Features and Limitations

- Messages can be exchanged between WaveMail stations and GLPLUS/RLPLUS stations.
- WaveMail stations and GLPLUS/RLPLUS stations can communicate in Chat mode (online dialog).

Limitations:

- Attachments will NOT be sent to GLPLUS or RLPLUS stations.
- The following table shows the supported forwarding capabilities. G1 and G2 are GLPLUS/RLPLUS stations. W1 and W2 are WaveMail stations.

From	To/via	To/via	To	supported	reverse direction supported
	W1 ->	G2		yes	yes
G1 ->	W1			yes	yes
G1 ->	W1 ->	G2		yes	yes
G1 ->	W1 ->	W2		yes	-
G1 ->	W1 ->	W2 ->	G2	-	-
W1 ->	W2 ->	G2		-	-

9.6.2. Special actions on WaveMail Station

Define a link to a GLPLUS/RLPLUS station:

Define a link to the GLPLUS or RLPLUS station as you do for WaveMail stations (see Network Setup). You must enter a special Station-ID of the form 'GP:*call*" where *call* must be set to the call sign of the remote SWISS-PTC or Packet Radio modem

 example: `GP:hb9cnm`

Address a message to a GLPLUS/RLPLUS station:

You can address messages to a GLPLUS or RLPLUS station using the special Station-ID as address (`GP:hb9cnm` in the above example). The 'GP:' tells WaveMail that the remote station is using GLPLUS or RLPLUS software.

Send+Receive messages (WaveMail is calling station):

You can use the Send + Receive button on the main screen to exchange messages with GLPLUS or RLPLUS stations.

9.6.3. Special actions on GLPLUS/RLPLUS Station

Send+Receive messages (GLPLUS/RLPLUS is calling station):
The remote GLPLUS or RLPLUS station can use the ..EXCHANGE and ..READALL commands to exchange/read messages. Other GLPLUS/RLPLUS commands (e.g. ..DIR) are not supported.

Chat mode:
- A GLPLUS/RLPLUS station can enter `..CHAT` after connecting a WaveMail station in order to open the chat window on the WaveMail station.

9.6.4. Using the X-GLPTO: Header in GLPLUS/RLPLUS

- Messages from GLPLUS/RLPLUS stations are delivered to the POSTMASTER on a WaveMail station, unless a different recipient is specified with the X-GLPTO: keyword (see GLPLUS or RLPLUS manuals). A message from a GLPLUS/RLPLUS station with the header line
  `'X-GLPTO: hermann_schuemperlin.effretikon'` will be sent to user *hermann_schuemperlin* at WaveMail station *effretikon*.
- A message from a GLPLUS/RLPLUS station may automatically be forwarded to another GLPLUS/RLPLUS station, but only one WaveMail station may be in the route.
  Example: An RLPLUS station sends a message with the header line
  `'X-GLPTO: GP:hb9cnm'` to a WaveMail station. This message will be forwarded to the GLPLUS/RLPLUS station with the call *hb9cnm* . Note that the call must be preceded by the '**GP:**' keyword.

9.6.5. Disable handling of the X-GLPTO: Header in WaveMail

Forwarding messages with an X-GLPTO: header line is a nice feature for GLPLUS/RLPLUS compatibility, however it may also be a risk because it may allow unknown stations to enter messages into your network. If you want to disable the forwarding by X-GLPTO: headers, then add the following line to the [WM-GENERAL] section of the WAVEMAIL.INI file:
XGLPTOenabled=0

9.7. Swiss-PTC Modem specific topics

9.7.1. Public-Mode with Swiss-PTC Modems

As a default, SWISS-PTC modems operate in the so called Non-Public Mode. In Non-Public Mode only modems with the same code can be connected, thus having a closed network. If you want to establish a connection with a remote station that uses the so called Public-Mode (same as Amateur Pactor), the modem must be forced to Public-Mode.

If you are the calling station, you can add a '+' sign in front of the remote stations callsign, e.g. +hb9cnm   (in Link Properties of Network Setup). Whenever you attempt to establish a link with that particular station, WaveMail will force the SWISS-PTC Modem to Public-Mode. The SWISS-PTC Modem automatically returns to Non-Public mode after disconnect.

If you are the receiving station, you select the SWISS-PTC Modem on the Modem Status Window of the main screen. Then you press CTRL+SHIFT+P to force the modem to Public-Mode. The Public-Mode is indicated by [P] in the status of the modem. If you press CTRL+SHIFT+N the modem will return to Non-Public Mode.

9.7.2. Adjusting Audio Level on Swiss-PTC II Modems

The audio level of Swiss-PTC II modems is adjusted by a software command. Use Select Station Setup from the Setup menu. Then select Properties for the desired Swiss-PTC modem. Enter the following lines in the Initialization string(s) list:
LOCK 0
FSKA fff
PSKA ppp

Replace fff and ppp with the values for Frequency-Shift-Keying and Phase-Shift-Keying. Default values are FSKA 210 and PSKA 300. The LOCK 0 line is needed to unlock the Swiss-PTC parameter locking mechanism.

10. Background information

10.1. Message Flow

After you create a message, WaveMail creates a compressed version of the message (including attachments). WaveMail evaluates to which stations the message should be sent (destination station(s) and forwarding station(s)) and saves a copy of the compressed message in the queue(s) for the respective station(s). The next time a link is established with a station, the messages in the queue for that particular station are sent. This may include messages which are not addressed to that station but which have to be forwarded by that station.

When you select Send+Receive from the toolbar (or when a scheduled connection is executing), WaveMail will perform the login operation, send messages (smallest message first, biggest message last) and then receive messages (again smallest first). All notifications are packed into one special message for exchange between stations.

10.2. Message Routing

If WaveMail has to forward a message to STATIONX it will use the following scheme to decide where to send the message next:

1. If a **Specific Routing** has been defined for STATIONX, then WaveMail uses this routing information.
2. If a **Link** with station STATIONX is defined, then WaveMail will forward the message over this link.
3. If neither 1 nor 2 are true, then WaveMail will forward the message to the station defined in the **Default Routing** field.
4. If no Default Routing is defined, WaveMail will return a 'Address Unknown Notification' to the originator of the message.

10.3. Automatic Link Establishment

10.3.1. Single channel radio links / telephone links

If WaveMail fails to establish a link on the scheduled time, it will automatically retry after a preprogrammed interval (1 min for telephone modems, 10 min for radio modems). After 3 unsuccessful attempts WaveMail gives up and will try to establish the link on the next scheduled time. The case where the channel, line or remote modem is busy is not counted as an attempt and WaveMail will keep on trying with short intervals (60 seconds for telephone modems, 120 sec for radio modems).

10.3.2. Multi channels

If a Swiss-PTC modem is connected and Transceiver Control is enabled, WaveMail executes the following procedure for automatic link establishment:

At the scheduled time, WaveMail

- attempts to connect on the 1.Channel (depending on the time of day) defined in the 'Channels' dialog of the 'Link properties'
- if the channel is busy or the connect attempt fails, WaveMail attempts to connect on the 2. Channel (if defined)
- if the channel is busy or the connect attempt fails, WaveMail attempts to connect on the 3. Channel (if defined)

After a preprogrammed time, WaveMail will retry on the 1.Channel and so on. After 3 unsuccessful attempts (per channel) WaveMail gives up and will try to establish the link on the next scheduled time. If a channel is busy at the time of a connect attempt, this is not counted as attempt. WaveMail will continue to check that channel (with a preprogrammed delay between attempts) until the channel seems free. If a channel is busy, WaveMail will retry on that channel after 2 minutes. After a failed connect attempt on a non-busy channel, WaveMail will retry on that channel after 10 minutes.

For every channel the following action is taken:
1. Test whether transceiver is responding.
2. Set channel
3. Wait a few seconds to let the Swiss-PTC check whether the channel is busy.
4. Try to connect remote station

After a failed connect attempt or after disconnecting, WaveMail instructs the transceiver to resume scanning.

11. Tips and Tricks

How to delete messages older than a certain date

Select the desired folder. Sort messages by date (click on the header of the Date column). Click on the first message to be deleted. Then press and hold the Shift key and click on the last message to be deleted. Now press the Delete key.

Importing existing text from a file into a new message

Text from a plain text file may be imported to a new message. In the New Message window you can select Insert Text from File from the Edit menu or you can use button . Even the TO:, CC: and SUBJECT: headers of the imported text file are copied to the respective fields of the new message (headers must be in first 10 lines and no empty line may preceed these headers).

Saving a draft version of a new message

When you are creating a new message, you might want to save it while the message is not yet complete for sending.
In the New Message window, select **Save in Draft Folder** from the **Message** menu. You can then later select the saved message in the Draft Messages folder and open it to continue editing before sending the message.

The remote WaveMail station has not yet defined a link with my station, but I want to send a message.

Exchanging messages is only possible, after a link has been defined on both stations. However, you can send a message to the Postmaster of the remote station even if the link to your station has not yet been defined on the remote station. You could send a short message, asking the remote Postmaster to add a Link to your station in his Network Setup.
1. Use Chat from the Connection menu to establish an online dialog with the remote station.
2. After connection is established, press the Enter key to start e new line.
3. Enter the 4 letters ZCZC followed by the Enter key. This will start message saving on the remote side.
4. Enter your text.
5. Enter the 4 letters NNNN followed by the Enter key. This will end message saving on the remote side. The text you entered is delivered to the postmaster on the remote station.

Automatic use of alternative links between two stations

If you have an HF-connection (Swiss-PTC) as well as an Inmarsat connection between two stations, then you might wish that normally messages are transmitted over HF (no airtime cost). However, because of varying propagation conditions, HF might not always be available. Therefore you would prefer that messages are transferred over Inmarsat if it was not possible to send/receive over HF.

You can easily do this by scheduling an automatic connection over Inmarsat at regular times. As an example you could schedule a connection over Inmarsat once early in the morning and once early in the evening. If all messages have already been transferred by HF, then the Inmarsat connection will be extremely short. However, if some messages were not transferred over HF, then they will be transferred over Inmarsat.

Like this you take full advantage of both systems:

-save cost using HF if possible

-use the high availabilty of inmarsat as backup

See '**Network Setup**' in chapter **'Advanced Setup'**, for details about how to configure scheduled connections.

Copying the addressbook

The public addressbook is saved as WAVEMAIL.ADR at the same location where WAVEMAIL.EXE is stored (normally c:\programs\wavemail\program\). You can copy this file from one WaveMail station to another if you want to have the same addressbook available.

You can also distribute WAVEMAIL.ADR by sending it as an attachment. If you send the WAVEMAIL.ADR as an attachment in a message to the postmaster of a WaveMail station, the recipient will have the option Save as Addressbook when he double-clicks the WAVEMAIL.ADR attachment. This will replace the public addressbook with the attached WAVEMAIL.ADR.

12. Troubleshooting

<u>Connection with remote WaveMail station is possible, but messages are not sent/received</u>
Select Show Connect Log from the Special menu to view the connect log and check the column 'Result' of the connect log.
If the result is '**login error**', then the remote WaveMail station has not defined a link with your station or it has defined a different password to protect this link.
If the result is '**timeout**', then WaveMail is not running on the remote station.

<u>Address unknown</u>
If you get non-delivery notifications of the following type:
```
Address  unknown   :  address_y   (Station  station_x  has  no  routing
  information) 26.06.2000 22:07
```
then station_x (which may be your station or another station on the route) does not know where to send the message. This may be because the address is wrong or because the Network Setup is not correct. If your station does not have a direct link to the destination, then you should either define a default routing station or a specific routing information for this address (see Network Setup).

<u>The modem(s) are not properly configured</u>
It is important to switch the modem(s) on before starting WaveMail, because WaveMail initializes the modem(s) at startup.
You can also use the Reopen Modem function (select Modem Functions from the Special menu) to completely reinitialize a modem.

<u>Login / LAN operation</u>
The following is only applicable if you use WaveMail with several users on a LAN.
If you define local users on a WaveMail station, these users can either login on the WaveMail-Server PC (where the modems are connected) or they can login from another PC where WaveMail is installed for Client access over LAN.

After a user has logged in from a WaveMail-Client, it is not possible for this user to login directly on the WaveMail-Server PC. This is made in order to prevent from losing messages. If you try to login directly on the WaveMail-Server PC after having logged in from a WaveMail-Client, then you receive the message *'This account can only be accessed by CLIENT WaveMail PCs! '*.

<u>Problems with US-Robotics modem</u>
Some types of US-Robotics modems need a special Initialization string. As a default, WaveMail ititializes modems at startup with AT&F (set factory defaults).

(In addition to that WaveMail sends the string ATE0Q0X4V1&D2&C1S0=0 before dialing.)

For some US Robotics modems (Sportster) the string to set factory defaults is AT&F1. You can set this in SETUP / STATION SETUP / MODEM PROPERTIES. Activate Advanced Setup and enter **AT&F1** as **Initialization string(s).**

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