TWC

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COLLABORATORS			
	TITLE : TWC		
ACTION	*NAME*	*DATE*	*SIGNATURE*
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TWC

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        ###       #############   ########
       ###       ##########    ######   by Lutz Vieweg


            -*- MANUAL -*-

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           And why use it?

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          Function
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menu/gadget/ARexx functions

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IMPORTANT NOTE TO ALL WHO HAVE BEEN USING TWC 2.06 BEFORE:
TWC III is not just another version of TWC, it's a complete
rewrite. Not much is the same as before. TWC III is incompatible
to versions < 3.

1.2 What is TWC???

If you've got a modem, you'll sometimes want to exchange data with
others using it. You can do this with many tools, but they all have
their drawbacks. TWC hasn't. :)

Most other communication software is designed for calling "Bulletin-
Board-Systems", this is not what TWC has been made for. TWC is
meant to be the ultimate utility when you want to call another
TWC-user, just to exchange some data and chat with him...

A short list of features TWC provides (don't mind if you don't
understand some of theese, you can benefit from them without knowing)

- Extreme reliability and system-friendlyness
- Full bidirektional transfer of files, chat-text (and soon even more),
  can save you up to 50% time and phone-bill
- High transfer rates, performs well on bad lines, where other protocols
  sucks with permanent resends
- Low CPU-time usage even at high transfer-rates, example: Bidirectional
  transfer at 2200+2200=4400cps on an A3000 takes approx. 11% CPU time
- Comfortable, font-sensitive GUI
- Multi-threaded program structure, asynchronus GUI, disk I/O etc...

1.3 Requirements - what you need to enjoy TWC

To run TWC you'll need the following things:

- An Amiga running KS 2.04 or newer

- A modem featuring at least one real 'Full Duplex' transmission standard.
  If you don't know whether your modem fits, just try it - most modern
  modems are suitable.

  Some bidirectional modulation schemes are:

  V.22, V.22bis, Bell 212A, Bell 103, V.21, V.32,
  V.32bis, V.32terbo, V.fast

  The following modulation methods are definitely _not_ advisable to
  be used with TWC:

  V.23, USR HST, Telebit PEP, Telebit PEP+

  If you've got a modem which normally uses one of theese,

make sure to switch to a suitable modulation method with
your initialisation command.

- Your modem has to be connected to your computer with a so-called
  "7-Wire" cable. That means, RTS/CTS handshake has to be possible.
  The "carrier detect" (CD) wire has also to be connected.
  Modern high-speed modems are connected with such cables in general.

1.4   Quickstart - how to make your first connection

                   Little things have to be done to enjoy your first connection
with TWC. If you've got a partner on the phone, who also
has a copy of TWC, you might try a real transfer. If you
want to test out TWC alone, you can also do that, just read on.

Start TWC - now. Invokation can be done either by clicking
on the TWC-Icon at the Workbench, or you may start TWC from
a CLI or shell by simply typing "TWC" in the directory where
you have it. If you start TWC from a CLI, and your stack is
too small, a requester will appear and tell you how to
change this. You can give TWC filenames as parameters
either by passing them through the command-line or by
starting TWC with other Icons selected from WorkBench,
they'll be put into the "files-to-send" list on startup.

The first time you start it, TWC will open a 640*256 Hires
screen, with 4 windows on it (the windows may overlap). If
you've got a hardware that supports larger screens than 640*256,
the first thing you should is: Browse through the "Setup" menu,
find the submenu "Screen" and use the commands "Screen Width"
and "Screen Height" there to adjust the size. Another menu-
command, "Display ID" allows you to change the mode of the
screen TWC will open, here are some usual values for this ID:

0x8000 open an ordinary Hires screen
0x8020 open a super-Hires screen
0x8004 open an interlaced Hires screen
0x8024 open an interlased super-Hires screen

(For more information on further display-id's refer to the
 C= include-file "graphics/displayinfo.h")

All TWC screen-settings apply only at invocation time,
so you should leave TWC now by clicking the "Quit" Gadget,
and starting it again. Whenever you leave TWC, it will
write its settings back to disk, by default to a file
called "TWC_setup" in the same directory where TWC is.
So make sure TWC can write to this directory.

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1.5   Visit the setup-menu

Once you're satisfied with the screen, you may arrange the windows
at it as you like. Two of them are resizeable - to take advantage
from larger screens...

Remember, all the changes you make are stored in the setup-file
when you leave TWC.

Now visit the setup-menu again, and call each of its commands
one after each other. If you don't know what a certain value
is good for, just leave it as it was by default. There are a
few values where it's likely you will want to make a change:

Modem/ATA-like command: If you've got a modem with the german
   "BTZ" you may have bad luck: Some of them are unable to
   switch from voice to data mode online, so you'll have
   to config your modem to answer an incoming call automatically,
   please refer to the modem's manual

Modem/ATD-like command: Some modems are dropping the line
   soon when you give an ATD command... a solution may be
   using ATX0D instead, but please read your modem's manual
   on this topic when in doubt...

Serial/Baudrate: Adjust this value for your modem. Most modern
   modems support fixed baudrates, 2400, 9600, 19200, 38400 etc. -
   the default value here is 19200 which is suitable for the
   majority of modems nowadays, but you may need to change this,
   for example, if you've got only a lousy 2400bps modem...
   please refer to the manual of your modem.

You may also want to change the default paths for incoming
and outgoing files, but all the other settings are not that
important by now.

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1.6   Now establish the connection

When you've gone through the little setup, you may now
actually make your first connection. When you've got
a partner on the phone-line, he should have started
and setup TWC, too. One of yours should now press the "ATA"-
Gadget, the other one the "ATD"-Gadget. There should
come some strange beeping noise from your modems, then,
and a text like "JUNK> CONNECT 14400" or similar should
soon appear in the status-window. If not, read the chapter
"Problems".

If you don't have a partner on the phone to test TWC,
you may test it all alone. Use the "Modem/Chat" radio

buttons to switch to "Modem" mode. Give your modem
the command to enter "loopback-test-mode", this command
is "AT&T1" at many modems. The modem should then connect
with itself, and everything you send will be mirrored back
to you. This way, you can transfer data to yourself...

Once the connection is established, you can start sending
your partner what you like. Make sure the "Modem/Chat"
radio-buttons indicate "Chat". Just type something on
the keyboard. The text you type should appear in the string
requester at the "Connect-Panel". When you hit the RETURN-
key, the text in the requester is send to your partner.
A copy is also shown in your "Chat History". Messages
from your partner are preceded with a "> " and also shown
in the "Chat History".

Once you've chatted enough, try a file transfer. Just click
the "Add" Gadget in the "TWC Transfer Panel", a file requester
will appear and you can select one or more files to be send.
After you've made your choice, the files you selected will
be listed in the "TWC Transfer Panel". The transfer of those
files to your partner does not immedietly start. It actually
starts when you click the "START" Gadget. Once you've
started the transfer, it will continue until the connection
is closed, or you hit the "ABORT Sending" Gadget. To abort
a transfer that comes from your partner, you may click "ABORT
Reception".

If you start a file transfer with TWC, and the receiver has
already a file of that name, which is shorter than your's,
TWC will assume you want to resume a former interrupted
transfer.

Now try the feature that's the main difference between TWC
and other communication software: You may continue to chat
while you exchange files with your partner, you may select
more files to be send, and file transmission goes in both
directions at the same time which effectively doubles
the transfer-rate.

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1.7 More funny features available

                Here are additional functions you may use when you're connected:

Connect Panel / Hang Up: Hitting this button drops the DTR
  outlet of your serial port, causing the modem to go on-hook.
  If you modem does not hang up when you click this Gadget,
  please make a change in your modems configuration, refer
  to your modem's manual for more information on the DTR-behaviour.

Connect Panel / Ring Other: If your partner does something

```
    in the background while you're transferring files, and
    you want him to listen, click the "Ring Other" Gadget.
    The TWC-screen on his computer will then get into front,
    and a "display-beep" announces your call for attention.

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                  next page
```

1.8   How to get rid of TWC

Assumed the inpropable case you want to leave TWC, you've the
choice how to do this: The normal way is clicking the "Quit"
Gadget or the close-Gadget of the "Connect Panel". Everything
is smoothly abandoned, then. A more brutal way to leave TWC
is sending it a BREAK signal, for example by pressing CTRL-C
in the shell or CLI where you started TWC. Well, there should
be little reason to do it the unusual way.

Remember, unless you've registered TWC, TWC will automatically
quit after approx. 20 minutes.

1.9   Detailed function reference

The following pages will describe the functions and
Options of TWC in a more detailed manner. Gadgets, menus
and related ARexx commands are explained together, if they
serve a (nearly) identical function.

1.10   Options when invoking TWC from a CLI or shell

                 If you start TWC from the CLI or a shell, you may pass parameters
to it (all parameters are optional):

```
TWC [-s <setup-file-name>] [-o <name> <value>] [-x <address>] [-r]
    [<filename(s)>]
```

<xxx> are placeholders. The options are:

-s <setup-file-name>
  You can supply the name of the setup-file TWC should use here. This file
  may exists or not. TWC will store the setup under the name of the last-read
  setup-file when exiting.

-o <name> <value>
  Defines a setup-entry, for a more detailed description see
                  ARexx
                      command SETUP. You can supply as much -o parameters as you like

-r

    Tells TWC to startup, but not to allocate a communication port. This may
    be a good idea if you want to use TWC as an external protocol driver.

-x <address>
    Allows you to start TWC with an already opened serial port. This may be of
    interest only to programmers. <address> has to be a pointer to a initialised
    struct IOExtSer, in decimal or hex (e.g. 49152 or 0xc000)

    IMPORTANT: Don't use or modify your IOExtSer while TWC uses it.
               The function "HANGUP" will have no effect when TWC uses an
               external IOExtSer structure.
               All serial settings will have no influence when TWC uses an
               external IOExtSer structure.

<filename(s)>
    You may pass as much filenames to TWC via the command line as you like, they
    will appear in the to-send-list.

1.11   Starting TWC from the Workbench

Just double-click the TWC-icon to start it.

You may also click the TWC icon once, click on other icons once, and
then on a last icon twice. This will start TWC with the later clicked
icons in the files-to-send list.

1.12   Gadget-, menu- and ARexx-functions

ARexx commands are case-insensitive, parameters are not. <xxx> is a
placeholder for a parameter supplied with an ARexx command, xxx gives
a short description of the parameter.

Menu : Project / About TWC
Gadget: -
ARexx : -

Displays a short text telling you about the version and the author
of the TWC you are currently running.

Menu : Project / Load Setup
Gadget: -
ARexx : LOADSETUP <filename>

Resets the current settings to the default-values, then tries to load
a new setup-file. When TWC exits, and any changes have been made to
the setup, the setup is written back to the file where it has been
loaded from.

Note: The setup file TWC uses is human-readable and "human-editable" -
      you can load it with any text editor and edit it, if you like.

```
------------------------------------------------------------------------
Menu  : Project / Save Setup
Gadget: -
ARexx : SAVESETUP <filename>
```

Stores the current setup into the file you specified. TWC will store
the setup again under the same name when any changes are made until
exit.
```
------------------------------------------------------------------------
Menu  : Project / Quit
Gadget: Quit
ARexx : QUIT
```

Exits the program. Of course, all files currently open are closed etc,
but if transfers are in progress when you quit the program, your
partners TWC may keep trying to send or receive data, so it's a good
idea to end the transfers before you quit.
```
------------------------------------------------------------------------
```

1.13   Gadget-, menu- and ARexx-functions

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```

```
Menu  : Function / Originate (ATD)
Gadget: ATD
ARexx : ATD
```

Sends a command to your modem causing it to go off hook and listen
to carrier tones from the remote modem. When a connection could be
established, the modem will answer with a message like "CONNECT 14440"
or similar, and you'll then be able to send and receive data to/from
the remote modem btw. your partner on the other end of the line.
The command that is send to your modem can be configured with the

```
              Setup / Modem / ATD-like command
               menu item.
------------------------------------------------------------------------
Menu  : Function / Answer (ATA)
Gadget: ATA
ARexx : ATA
```

Sends a command to your modem causing it to go off hook and send
carrier tones to the phone-line. When a connection could be
established, the modem will answer with a message like "CONNECT 14440"
or similar, and you'll then be able to send and receive data to/from
the remote modem btw. your partner on the other end of the line.
The command that is send to your modem can be configured with the

```
              Setup / Modem / ATA-like command
               menu item.
```

IMPORTANT:
- To make a connection, one of the modems on the line has to
  act as "originator", the other as "answerer". In most cases,
  it doesn't matter which is which, but there won't be any

   connection if both modems try to originate or answer a call
 - Establishing the connection can take some time, up to 20 seconds.
   While the modems are trying to connect, strange noise is coming
   from their speakers. This is entirely normal. Please don't send
   any data to the modem while it is trying to connect, it would
   instantly give up the try.

 Menu : Function / Dial Number
 Gadget: Dial
 ARexx : DIAL <number>

 Sends a command to your modem causing it to dial the specified number
 and establish a connection, then some data is sent to the remote
 to identify the caller as TWC. This feature is sort of useless when
 communicating with a human partner, it is meant for future support
 of BBS'es that allow users to login in with TWC.
 The command that preceeds the number to make your modem dial can be
 configured with the
                 Setup / Modem / ATA-like command
                  menu item.

 Menu : Function / Hang Up
 Gadget: Hang Up
 ARexx : HANGUP

 Closes the connection to the remote modem, the modem will go on hook,
 and all transfers currently in progress will be aborted.

 IMPORTANT:
 - Your modem has to close the connection "when DTR drops" - this
   is a feature available with any modem, but for any reason, your
   modem might be configured not to do so. If your modem does not
   go on hook when you initiate a hang up, you should consult your
   modems manual and adjust the modem initialisation command according
   to it.

 Menu : Function / Ring other
 Gadget: Ring
 ARexx : RING

 Sends a very small data-packet to your partner causing his TWC to
 notify your request for attention. This is by default done by
 bringing the TWC screen to the front and flashing its background
 color.

 Menu : Function / Add File
 Gadget: Add File
 ARexx : ADDFILE <filename>

 Adds a filename to the list of files to be send (which is displayed
 in the window called "transfer panel"). If a connection is established
 and another file has already been sent, TWC will instantly begin the
 transmission. Otherwise, it will remain in the list until the
 transfer is started and all preceding files have been transmitted.

 Menu : Function / Start Transmission
 Gadget: START

ARexx : START

Starts the transmission of the files in the "to-send"-list. This
is only possible if a connection is already established. Once
the transfer is started, all files in the list are transferred
one after each other until the list is empty.

Menu : Function / Protocol Status
Gadget: -
ARexx : PROTOCOLSTATUS

Diplays some information on the current protocol status in the status
window. This is sort of uninteresting to the ordinary user, but it
might help me to locate a bug if any problems are occuring at
the transfer...

Menu : Function / Abort Reception
Gadget: Reception (below the text "ABORT")
ARexx : ABORTREC

When your TWC is receiving a file, and you apply this function, the
sender will be asked to stop the transmission. In general, the sender
should abort transfer to your TWC then within a few seconds, but if,
for any reason, the sender does not stop sending, you may apply
the Abort Reception function a second time, then the reception
will end immediately, without waiting for sender.

Menu : Function / Abort Sending
Gadget: Sending (below the text "ABORT")
ARexx : ABORTSEND

Stops the transmission of the file your TWC currently sends.

Menu : Function / Send File as Chat
Gadget: -
ARexx : -

Sends the contents of a file to your partners TWC as if you typed
it into the input line. This feature may sometimes be useful when
you want to send your partner e.g. the listing of a directory,
a short readme or alike. The filesize is limited to 10kB.

Menu : Functions / Send Sound File
Gadget: -
ARexx : SENDSOUNDFILE <filename>

Sends the contents of an 8SVX (IFF) sound-file to your partners TWC,
there it will be played back if sound is enabled. This function is -
apart from its testing purposes - just a little joke. The sound is
treated the same way as if it where actually coming from a sampler.
The same online compression/decompression is applied as it is to
"voice chat".

IMPORTANT:
- If the sample rate of your sound divided by the compression factor
  is higher than the CPS-rate your modems achieve, the sound will
  be played back with nasty "gaps". See Setup / Sound for details.

1.14   Gadget-, menu- and ARexx-functions

```
Note: The placeholder <x|y> means "x or y"
      Example: <"YES"|"NO"> means provide "YES" or "NO"
               as parameter

Note: When supplied as parameters, "YES", "Y", "ON" and
      "NO", "N", "OFF" (all case-insensitive) are synonyms.
```

```
----------------------------------------------------------------------
Menu  : Setup / Screen / Open on PubScreen
Gadget: -
ARexx : SETUP "open_GUI_on_public_screen" <"YES"|"NO">
```

Decides whether TWC should open its GUI on a "public screen"
rather than on a custom screen.

```
IMPORTANT:
- All screen-settings take effect only on startup, quit and
  restart TWC to apply them.
----------------------------------------------------------------------
Menu  : Setup / Screen / PubScreen Name
Gadget: -
ARexx : SETUP "public_screen_name" "<name>"
```

Defines the name of the public screen TWC should open its GUI upon,
when this is enabled. The default name is "Workbench", that is the
screen where the workbench, shells etc. resides.

```
IMPORTANT:
- All screen-settings take effect only on startup, quit and
  restart TWC to apply them.
----------------------------------------------------------------------
Menu  : Setup / Screen / Screen Width
Gadget: -
ARexx : SETUP "screen_width" "<number of pixels>"
```

Defines the width of the custom screen TWC should open its GUI upon,
when this is enabled. The default width is -1, this means: The
standard width that is defined within the preferences tool.

```
IMPORTANT:
- All screen-settings take effect only on startup, quit and
  restart TWC to apply them.
----------------------------------------------------------------------
Menu  : Setup / Screen / Screen Height
Gadget: -
ARexx : SETUP "screen_height" "<number of pixels>"
```

Defines the height of the custom screen TWC should open its GUI upon,
when this is enabled. The default height is -1, this means: The
standard height that is defined within the preferences tool.

```
IMPORTANT:
- All screen-settings take effect only on startup, quit and
  restart TWC to apply them.
-----------------------------------------------------------------------
Menu  : Setup / Screen / Display ID
Gadget: -
ARexx : SETUP "screen_display_id" "<display id>"


Defines the mode of the custom screen TWC should open its GUI upon,
when this is enabled. The ID's possible values may not be known
to you, here are some examples:


0x8000 open an ordinary Hires screen
0x8020 open a  super-Hires screen
0x8004 open an interlaced Hires screen
0x8024 open an interlased super-Hires screen


I know it is not very comfortable to choose the screen mode
this way, but KS 2.04 does not know any standard screen-mode
requester. There may be a requester in future releases of TWC...


IMPORTANT:
- All screen-settings take effect only on startup, quit and
  restart TWC to apply them.
-----------------------------------------------------------------------
```

1.15   Gadget-, menu- and ARexx-functions

```
-----------------------------------------------------------------------
Menu  : Setup / Serial / Baudrate
Gadget: -
ARexx : SETUP "serial_device_baud_rate" "<baudrate>"


Sets the baudrate from your computer to your modem. With all modern
modems, this baudrate has not to be the same as the rate between
your modem and the remote modem. Older modems may require the same
baudrate between the modem and the computer as they use to the
remote modem.
Choosing the optimal baudrate to your modem is one of the more easy
things:  The higher, the better.  When you encounter trouble, lower
the baudrate.  On 68000-driven Amigas you won't be able to achieve
more than 19200 baud to your modem unless you use a non-standard
serial-device such as the "BaudBandit.device", see below.  On faster
Amigas, the baudrate should normally be the highest one your modem
supports. Please consult your modems manual to check for the baudrates
your modem supports, often used values are: 2400, 9600, 19200, 38400,
57600, 115200 etc..
-----------------------------------------------------------------------
Menu  : Setup / Serial / Device
Gadget: -
ARexx : SETUP "name_of_serial_device" "<device name>"


Defines the name of the device TWC should open as communication
channel.  The standard device that drives the Amiga's serial port is
called "serial.device" and should reside in your devs:  directory.
```

```
You may use any device with TWC that acts similar to the
"serial.device".  By now, the only important alternative I know is the
"BaudBandit.device", which may enable users of slow Amigas to use
baudrates > 19200.  On faster Amigas, the original "serial.device"
seems to be the better choice.
------------------------------------------------------------------------
Menu  : Setup / Serial / Unit
Gadget: -
ARexx : SETUP "serial-device_unit_number" "<unit nr>"

Defines the unit TWC should open the device with. This is important to
users with multi-serial cards only, if you don't have such, leave this
value 0.
------------------------------------------------------------------------
Menu  : Setup / Serial / Flags
Gadget: -
ARexx : SETUP "serial-device_flags" "<flags>"

Defines the flags TWC should open the device with. If you don't know
what this value could be good for, please leave it as it is.
Advanced Amiga users may for any reason wish to make changes here,
but don't expect TWC to run perfectly without flow control...
------------------------------------------------------------------------
Menu  : Setup / Serial / Buffer Size
Gadget: -
ARexx : SETUP "serial-device_read_buffer" "<buffersize>"

Defines the size of the buffer the serial device provides for incoming
data. 32768 seems to be a sufficient size, don't make the buffer too
small, higher values won't hurt.
------------------------------------------------------------------------
```

1.16 Gadget-, menu- and ARexx-functions

```
------------------------------------------------------------------------
Menu  : Setup / Modem / ATA-like command
Gadget: -
ARexx : SETUP "ATA-like_modem_command" "<command>"

Defines the command string to be send to your modem when using the
"ATA"-function. This is, by default, the string "ATA\r\n", the
"\r" stands for "carriage return", the "\n" for "newline". If you've
got any trouble with the default setting, refer to your modems manual
for further information, topic "answering calls".
------------------------------------------------------------------------
Menu  : Setup / Modem / ATD-like command
Gadget: -
ARexx : SETUP "ATD-like_modem_command" "<command>"

Defines the command string to be send to your modem when using the
"ATD"-function. This is, by default, the string "ATX0D\r\n". If you've
got any trouble with the default setting, refer to your modems manual
for further information, topic "originating calls".
------------------------------------------------------------------------
Menu  : Setup / Modem / Dial command
```

```
Gadget: -
ARexx : SETUP !!!
```

Defines the command that should precede the number you supply to the
dial function. This is, by default, the string "ATD". If you've
got any trouble with the default setting, refer to your modems manual
for further information, topic "dialing out".

```
Menu  : Setup / Modem / Initial command
Gadget: -
ARexx : SETUP "modem_initialisation_command" "<command>"
```

Defines the command that should be send to your modem whenever the
serial device is opened. This is, by default, the string "AT\r\n",
a command, that does nothing but tell the modem to answer with "OK".
You might want to insert something meaningful here, to configure
your modem to work best with TWC. One example: If you've got an
US Robotics Courier Dual Standard modem, you should insert
"ATB0\r\n" here. Refer to your modems manual for further information.

1.17 Gadget-, menu- and ARexx-functions

```
Menu  : Setup / Files / Incoming path
Gadget: -
ARexx : SETUP "path_for_incoming_files" "<pathname>"
```

Defines the directory path where to put incoming files at.

```
IMPORTANT:
```
- If you use this function from ARexx, please make sure your path
  name ends with a "/" or ":"

```
Menu  : Setup / Files / Outgoing path
Gadget: -
ARexx : SETUP "path_for_outgoing_files" "<pathname>"
```

Defines the pathname that occurs in the file-requester the first time
you use it. Of course you may send files from any other directory.

```
Menu  : Setup / Files / Bump filenames
Gadget: -
ARexx : SETUP "bump_filenames" "<YES|NO>"
```

Decides whether or not the names of incoming files should be modified
when there already is a file with the original name. The modification
is only done if the file that exists is the same length or longer than
the incoming file. The modification applied is just the addition of
a suffix, a point with a number following it. Example: original file
"foobar" exists, bumping is enabled. The incoming file will then have
the name "foobar.2". If "foobar" and "foobar.2" exists, the incoming
file will be named "foobar.3" etc.

```
Menu  : Setup / Files / Keep partial files
```

```
Gadget: -
ARexx : SETUP "keep_partial_files" "<YES|NO>"
```

Decides whether or not to keep files that have been received
incomplete. If disabled, this option will cause deletion of incomplete
files, but this makes resuming of an aborted transfer impossible.

```
Menu  : Setup / Files / Write buffer size
Gadget: -
ARexx : SETUP "file_write_buffer_size" "<buffersize>"
```

Defines the size of the buffer that is used to hold the data until
it is stored into a file. This does NOT mean that data is lost when
more has been received than could be written to the file. Incoming
data is buffered as necessary, maybe until the whole memory is filled.
This value only says: "Don't write incoming data immediately to the
file, instead collect it until you received xxx bytes of data, then
write the buffer to the file". This is done for efficiency reasons,
storing small amounts of data is mostly a waste of time.

1.18 Gadget-, menu- and ARexx-functions

```
Menu  : Setup / Protocol / Max. Packet Size
Gadget: -
ARexx : SETUP "maximum_packet_size" "<max bytes per packet>"
```

Tells TWC how many data-bytes should be bundled in one data-packet.
Values higher than 1016 are not possible, and not sensible, I think.
Large blocks results in greater delays for the chat-lines you send,
small blocks result in more protocol overhead, and therefore lower
transfer-rates. It's a question of taste what you prefer. When
you've got to use a slow 2400bps modem, you should use a smaller
packet size than 1016. When your communication channel is often
disturbed, smaller packets may increase the transfer-rate by
decreasing the amount of data that has to be resend after an error.
Most modern modems do error-correction by themselves, so this is not a
point.

```
Menu  : Setup / Protocol / Resend Timeout
Gadget: -
ARexx : SETUP "seconds_until_packet_resend" "<seconds>"
```

TWC is not as stupid as many other protocols that need the data to
come in the correct order, packet by packet. Those protocols suffer
from corrupted data heavily, the data rate dramatically decreases.
Not so with TWC. TWC takes the incoming data-packets regardless of
their order. Corrupted data-packets are resend at any later time, TWC
stores all the packets internally until it has the opportunity to
write sequential data to the incoming file. There are situations,
where the receiver is unable to order a corrupted data-packet again,
for example, because the negative acknolegdment got corrupted itself.
This case is handled by a timeout the sender triggers when a
data-packet hasn't been acknolegded for a certain period of time.
That doesn't mean the sender gets in panic, then... the unacknolegded

data-packet is just transferred again. You can adjust the described
timeout to fit your situation. A larger timeout may result in a
larger internal array of unacknolegdded packets, and in more time-waste
when there are unacknolegdded packets at the end of a transfer. A
smaller timeout may result in unneccessary resends of data under bad
circumstances, when the line is jammed. Experiment with this value,
if you like.
```
----------------------------------------------------------------------
Menu  : Setup / Protocol / Hangup Timeout
Gadget: -
ARexx : SETUP "seconds_until_auto_hangup" "<seconds>"
```

One should be able to start a file-transmission and then leave the
computer without having to worry about huge phonebills. So I
implemented a timer that causes the connection to be closed when there
has been no valid packet been transmitted for a certain period of time
(data-packets do not count, because they are resend automatically, but
data-acknolegdements count...).
```
----------------------------------------------------------------------
```

1.19   Gadget-, menu- and ARexx-functions

```
----------------------------------------------------------------------
Menu  : Setup / Process / GUI Priority
Gadget: -
ARexx : SETUP "priority_of_GUI_process" "<priority>"
```

Defines the priority of the GUI-process. 0 is the default, you may
have your reasons to change this. GUI Priority should generally be
lower than serial and disk I/O priority.
```
----------------------------------------------------------------------
Menu  : Setup / Process / Serial I/O Priority
Gadget: -
ARexx : SETUP "priority_of_serial_I/O_process" "<priority>"
```

Defines the priority of the process that handles all the serial in/out
operations. This priority should generally be higher then disk I/O
and GUI priority
```
----------------------------------------------------------------------
Menu  : Setup / Process / Disk I/O Priority
Gadget: -
ARexx : SETUP "priority_of_disk_I/O_process" "<priority>"
```

Defines the priority of the process that reads/write outgoing/incoming
files. This priority should generally be higher then GUI priority and
lower than the serial I/O priority.
```
----------------------------------------------------------------------
Menu  : Setup / Process / Audio Play Priority
Gadget: -
ARexx : SETUP "priority_of_audio_play_process" "<priority>"
```

Defines the priority of the process that decompresses and plays
incoming sound packets. It's a matter of taste whether to give
a higher priority to the audio replay process or the serial I/O
process, the default priority is 2 here.

```
-----------------------------------------------------------------------
Menu  : Setup / Process / Audio Sample Priority
Gadget: -
ARexx : SETUP "priority_of_audio_sample_process" "<priority>"

Defines the priority of the process that samples and compresses the
sound. This process needs a high priority to make sure the computer
listens when you speak...
-----------------------------------------------------------------------
```

1.20   Gadget-, menu- and ARexx-functions

```
-----------------------------------------------------------------------
Menu  : Setup / Notification / On new chat
Gadget: -
ARexx : SETUP "on_new_chat_screen_to_front" "<YES|NO>"

Decides whether or not you want the TWC screen to become the frontmost
when new chat texts arrive.
-----------------------------------------------------------------------
Menu  : Setup / Notification / On end of transfer
Gadget: -
ARexx : SETUP "on_end_of_transfer_screen_to_front" "<YES|NO>"

Decides whether or not you want the TWC screen to become the frontmost
when all selected files have been transferred.
-----------------------------------------------------------------------
Menu  : Setup / Notification / Warnings until beep
Gadget: -
ARexx : SETUP "warnings_until_display_beep" "<number>"

Defines the number of warnings to occur before notification.  A
warning doesn't mean that the transfer fails.  It just reports
something that would better not be.  Errors cause the screen to be
"beeped", and you can tell TWC to beep the screen also when a certain
amount of warning were displayed.  Just a matter of taste.


-----------------------------------------------------------------------
Menu  : Setup / Notification / Verbosity level
Gadget: -
ARexx : SETUP "verbosity_level" "<number>"

People with little knowledge are often confused by detailed technical
descriptions of what's going on.  If you don't want to see detailed
reports of each and any thing that happenes, lower this value.  If you
are curious, and need to know what extra-ordinary things happen,
increase this value.  Sensible values range from 0 to 20.
-----------------------------------------------------------------------
```

1.21   Gadget-, menu- and ARexx-functions

                    IMPORTANT: Sound support is not completely implemented in the
               current version, you may transfer IFF-8SVX-files, but
               the main feature, the sampler support, is not ready.
               Hold on for the next release...

Menu : Setup / Audio / Sound Enable
Gadget: -
ARexx : SETUP "sound_enable" "<YES|NO>"

Decides whether or not incoming sound should be replayed on your
Amiga. If you disable sound, incoming sound packets will simply
be ignored.

Menu : Setup / Audio / { No Compression, ADPCM-2, ADPCM-4 }
Gadget: -
ARexx : SETUP "sound_compression_method" "<0|2|4>"

Selects the sound compression method to be used. Without compression,
the sample-rate you can transmit over the communication channel is
limited to the CPS-rate you get when transferring files, e.g. about
1600 samples/sec on a V.32bis link. As you may imagine, such a low
sample rate is no good for understandable speech. TWC can compress
and decompress sound-data "on the fly", thus making higher sample
rates possible. The default sound-compression is ADPCM-2, this
one compresses 4 bytes of sound samples into 1 byte, allowing for
sample-rates up to 6400 Hz on a V.32bis link. Sound compression
is "lossy", but will surely sound better than uncompressed sound
on the lower rate. If you've got a very fast connection (e.g. an
ISDN device, or a NULL-modem cable), you may disable sound-
compression, this saves you some CPU-time.

Menu : Setup / Audio / Sample Rate
Gadget: -
ARexx : SETUP "audio_sample_rate" "<samples_per_second>"

Defines the number of sound samples to take per second. The higher
this rate, the better the sound quality will be, but the sample rate
is limited by the speed of the connection (see above). The default
value here is 6000, allowing permanent transmission of understandable
speech over a V.32bis connection. If you choose a too high sample rate
your partner will hear nasty "gaps" in the replay of the sound.
The sample rate does not affect IFF-8SVX-files that are transferred.

Menu : Setup / Audio / Sample Rate
Gadget: -
ARexx : SETUP "audio_sample_rate" "<samples_per_second>"

Defines the number of sound samples to take per second. The higher
this rate, the better the sound quality will be, but the sample rate
is limited by the speed of the connection (see above). The default
value here is 6000, allowing permanent transmission of understandable
speech over a V.32bis connection. If you choose a too high sample rate
your partner will hear nasty "gaps" in the replay of the sound.
The sample rate does not affect IFF-8SVX-files that are transferred.

```
Menu  : Setup / Audio / Sample HotKey
Gadget: -
ARexx : SETUP "sample_hotkey" "<key description>"
```

Defines the hotkey that enables sampling. With TWC, you should be able
to talk to your partner _while_ files are transferred. As you may
imagine, it would be a huge waste of transmission bandwidth if TWC
would permanently sample and transmit sound data. To obey this, the
sample hotkey works like the send-switch on a radio set. As long
as you hold down the hotkey, the sound-sample is taken. If the
hotkey is released, no sampling is done. For a description of
the parameter <key description> see
                Key Descriptions
                .
The default sample hotkey is "F9".

1.22   Gadget-, menu- and ARexx-functions

                    --- ↩


```
Menu  : Setup / Misc / Encryption key
Gadget: -
ARexx : SETUP "encryption_key" "<text>"
```

Defines the encryption key. If you supply no encryption key,
encryption is disabled. Phone lines are not safe. It's sort of easy
for other people to spy on your communication, and you may not want
them to do so. Whether you need to keep your data secret or you're
just a little paranoid doesn't matter, this option allows you to make
TWC scramble all the data it transfers. Your partner has to set
exactly the same encryption key to enable TWC to unscramble your data.
Of course it's nonsense to tell your partner the encryption key on the
phone that might be spyed... :)
Data scrambling needs some extra CPU time.

IMPORTANT: Don't change the encryption key while a transfer is in
           progress. If you experiment with encryption, remember
           to disable it next time if necessary.

```
Menu  : Setup / Misc / Display average CPS
Gadget: -
ARexx : SETUP "show_average_instead_of_actual_CPS" "<YES|NO>"
```

Switches display between average and "actual" CPS (chars per second)
rates. By default, the CPS displays in the "File Transfer Panel" are
integrating over time. This results in a relative stable CPS display,
that does not react heavily on temporary changes of the transfer-rate.
You can also have TWC to always compute an "actual" CPS-rate, based on
the time the last data-packed needed for transfer. This "actual"
value is nonsense for the sending-rate when your modem uses
packet-oriented protocols such as LAPM, V42 or MNP internally, because
the speed depends then on the fill-state of the modems buffer.

```
Menu  : Setup / Misc / Echo Your Chat
```

```
Gadget: -
ARexx : SETUP "echo_your_chatlines" "<YES|NO>"
```

Decides whether or not TWC displays the chatlines you send to your
partner in the chat-history. This feature is especially useful if
you want to control TWC via ARexx, and you need to evaluate the
incoming chat lines. By disabling the echo, you can make sure that
only the chat lines coming from the remote TWC are received by
the ARexx command
                    GETCHATLINE
                         .

```
Menu  : Setup / Misc / ScreenToFront hotkey
Gadget: -
ARexx : SETUP "screen_to_front_hotkey" "<key description>"
```

Defines the hotkey that brings the TWC screen to front temporarily.
As long as you hold down this key, the TWC screen stays in front, so
you can watch its contents, click a gadget on it etc. This is
especially useful if you're doing something on another screen and just
want to take a short look at what TWC's doing. For a description of
the parameter <key description> see Key Descriptions
KeyDesc}. The default screen-to-front hotkey is "F10".

```
Menu  : Setup / Misc / Serial Number
Gadget: -
ARexx : SETUP "ü" "<serial number>"
```

This is where to enter the serial number you get when you register
TWC. The default value here is 0, causing TWC to display a requester
telling you about the ShareWare status on startup. If you don't want
to see this requester anymore, enter any non-0-number here. But as
long as this number is not a valid serial number, TWC will quit
automatically after approx. 20 minutes. For detailed information on
the ShareWare-status of TWC and how to register, see
                    Copyright
                         .

1.23 Format of key descriptions

Some functions of TWC needs key-descriptions. Here are some examples
which show how to create such a description:

```
Description      Meaning
------------------------------------------------------------------------
x                The key 'x'
SHIFT a          The key 'a' while SHIFT is hold down
LSHIFT b         The key 'b' while the left SHIFT key is hold down
RSHIFT c         The key 'c' while the right SHIFT key is hold down
ALT d            Now make a guess!
LALT e           ...
RALT f
AMIGA g
```

```
LAMIGA h
RAMIGA i
CAPSLOCK j
CTRL k
NUMPAD 9        The key '9' on the numeric pad.
CAPS l
BACKSPACE
COMMA
CURSOR_DOWN
CURSOR_LEFT
CURSOR_RIGHT
CURSOR_UP
DEL
ENTER
ESC
F1
F2
..
F10
HELP
RETURN
SPACE
TAB

SHIFT CTRL o   Combinations are also possible!

I hope theese examples are explaination enough...
```

1.24 ARexx specific commands

The ARexx-port of TWC has the name "TWC.x" where x is a number ↩
                 incremented
by any newly started TWC. So the first TWC started has the ARexx-port "TWC.1".

IMPORTANT: Unlike many other programs, TWC has an asynchronus ARexx interface.
          This means: The ARexx commands generally return immediately, but
          the execution may happen somewhat later. The reason should be
          obvious: One could not react on incoming data whilst waiting for
          some other data to went out and vice versa, many other situations
          are alike. If not mentioned otherwise, assume any command to
          return immediatly.

If an ARexx command fails, an error message can be found in a variable called
"<portname>.LASTERROR", for the first started TWC e.g. "TWC.1.LASTERROR".

Results from ARexx functions are returned in a variable called "RESULT"
if you enabled results with the command "options results" (see ARexx guide).

Many ARexx functions are already explained above, the following is a list
of functions not available from the user interface:

GETSTATUSLINE
```

Returns the oldest status-line the status-history contains, and
removes this line from the history. The history-buffering is necessary
to enable you to get any status-line without missing one.
--------------------------------------------------------------------------
GETCHATLINE

Returns the oldest chat-line the chat-history contains, and
removes this line from the history. The history-buffering is necessary
to enable you to get any chat-line without missing one.
If you want to get only chat-lines that came from the remote TWC,
refer to
                Setup / Misc
                 / Echo your chat.
--------------------------------------------------------------------------
SENDMODEM <text>

Sends a text to the modem, just as if it where entered by the user
while the "Modem" radio-button is selected.
A carriage-return + newline is automatically added to your text.
--------------------------------------------------------------------------
SENDCHAT <text>

Sends a chat-text to the remote TWC, just as if it where entered by
the user while the "Chat" radio-button is selected.
--------------------------------------------------------------------------
CLEARFILES

Removes all files from the to-send-list. The names of the files in the
list are returned, delimited by spaces, and enclosed in double-quotes.
--------------------------------------------------------------------------
SETUP <entry-name> <value>

Allows you to define any setup-value. Each entry in the setup has a
name and a value. Just take a look at the TWC_setup file for possible
names.

IMPORTANT: If you supply an non-existing entry name, a new entry is
           created (and stored within the setup-file). This is done
           for forward/backward compatibility. Please avoid to add
           nonsense-entries to the setup.
--------------------------------------------------------------------------
READSETUP <entry-name>

Allows you to read any setup-value.  Each entry in the setup has a
name and a value, the value to the entry supplied is returned by this
function.  Just take a look at the TWC_setup file for possible names.
IMPORTANT: If you supply an non-existing entry name, a new entry is
           created (and stored within the setup-file). This is done
           for forward/backward compatibility. Please avoid to add
           nonsense-entries to the setup.
--------------------------------------------------------------------------
REOPENSERIAL

If the user changes the serial settings with the GUI, the port is
automatically reopened. This does not happen if you change the serial
parameters from ARexx. You have to call this function to reopen
the serial port from ARexx.

```
--------------------------------------------------------------------
RELEASESERPORT


Tells TWC to release the serial port. The port is reopened by the
REOPENSERIAL command. Many TWC functions cannot be executed while
the serial port is released.

IMPORTANT: Remember that even this command works asynchronusly,
           make sure that the serial port is actually released
           before trying to open it from somewhere else.
--------------------------------------------------------------------
WAIT


This function does _not_ return immediatly. It allows you to put your
ARexx program in a waiting state (consuming no CPU time) until
one of a set of events happen. Events that cause WAIT to return are:

- New status- or chat-line output
- TWC got an ARexx command (maybe from another process)
- TWC quits
--------------------------------------------------------------------
EXTERNALPORT <address>


Defines the address of an already initialised struct IOExtSer TWC
should use instead of a self-opened device. The address has to be
a decimal- or hex-number (e.g. 49152 or 0xc000).

IMPORTANT: Don't use or modify your IOExtSer while TWC uses it.
           The function "HANGUP" will have no effect when TWC uses an
           external IOExtSer structure.
           All serial settings will have no influence when TWC uses an
           external IOExtSer structure.
           EXTERNALPORT will take effect with the next REOPENSERIAL

Note: If you want to use TWC as an external protocol driver, you may
      make it this way:

      - start TWC in the background with the -r flag (released port)
      - when you want to transmit files, use EXTERNALPORT and
        REOPENSERIAL to prepare TWC for action
      - use all the other ARexx commands to do the actual transfer
      - use RELEASESERPORT to detach TWC from your structure
--------------------------------------------------------------------
```

1.25 Problems - ask Murphy, why.

```
This chapter will grow with the feed-back I get from you
and all the other TWC users. Questions unasked cannot be
answered...

A few hints that may help you:

- You start the file transfer, but it doesn't start immediatly,
  but after the first resend of the file-header. This may result
```

from either a buggy serial.device or some ugly modems. I don't
have a clue how to work around this, yet...

- If "HangUp" doesn't work, take a look at your modem's
  configuration. Your modem should hangup when DTR is dropped.

- If you use an A500 and BaudBandit.device, watch out for trouble.
  This thing is not that dependable. Try to use a lower baud-rate,
  if neccessary. BaudBandit 1.4 seems to work fine.

- If you use a ZyXEL Modem, don't use the 5.00e ROM-version along
  with V.42bis compression.

- If you use an USR dual standard modem, make sure you have a V.32bis
  connection. To one-way-only users HST and V.32bis seem to be
  of the same speed, but THEY AREN'T. Use ATB0 to enable V.32bis

- If you use a Telebit Modem, don't use PEP modulation. Use
  V.32 or even better V.32bis instead.

- Don't panic when your V.32bis modems retrain... bad line
  conditions can cause transfer interruptions up to 20 seconds,
  especcially with buggy modem-software (such as the early
  versions of the Rockwell-Chipset used in Supra, Twincom,
  Yoriko and others)

- If you're transmitting over really bad lines (such as the
  german BundesPest Telekotz often provides), and your
  average cps-rate drops below the value (physical bps rate)/10
  you may try to switch off the error-correction (V42, MNP4)
  of your modem. This may sound weired, but TWC's error correction
  is smarter than the one used in most modems, and you may
  gain higher rates... (USR Modems: AT&M0)

- The greater your modem's buffer is, the longer chat-packets
  will be delayed – please remember this... as I'm unable
  to change this...

If you've got other problems or solutions, please send
a report to my UseNet address lkv@mania.robin.de

1.26 Copyright and how to register TWC III

TWC III has been written by Lutz Vieweg. ©1993, all rights reserved.

The TWC executable and documentation is freely distributable,
the serial-number you get when you register is NOT. Remember
this serial-number will be stored in the setup-file, so don't
give anyone a copy of yours.

TWC comes without any warranty at all, use at your own risk.

To register your TWC and get an individual serial-number send
me a letter with US$ 15 in _cash_ + $3 for postage if I can't send
you the serial-number via email (UseNet). You may also send me

DM 20,- (+ 1DM for postage) if you're living in germany.

Once you enter your valid serial-number in the setup menu, TWC
won't quit after approx. 20 minutes anymore...

Send your registrations, feed-back, ovations etc. to:

Lutz Vieweg
Eduard-Rüppell-Straße 12
60320 Frankfurt am Main
GERMANY

UseNet: lkv@mania.robin.de

Remember: A bug that's not reported cannot be fixed.

(The following does not apply to anyone except to some
 guys that are having weired and childish discussions
 on the german UseNet, so don't mind if you cannot read it)

DISCLAIMER: Hiermit sei es ausdrücklich gestattet diese
---------- Software zu all jenen Dingen zu gebrauchen,
            die kleinkarierte Dogmatiker ihren potentiellen
            Kunden verbieten wollen, also beispielsweise
            die Übertragung der Wasserstoffbombenkonstruk-
            tionsunterlagen an Killer-Mutanten vom Mars oder
            der Verkauf an Arme, die der kostenfreien
            Beschaffungsmöglichkeiten von ShareWare unkundig
            sind.

            Ungeachtet dessen möge derjenige zu Staub zerfallen,
            welcher seine Seriennummer weitergibt...

1.27 Credits to some helpful people

I want to thank the following people for supporting me while
TWC was programmed:

van den Baard, Jan
   for "GadToolsBox" which was used to design the GUI

Friedl, Henning
   for valuable programming hints

Rohrdrommel, Michael
   for endless testing sessions on his antique A500 :)

Wild, Markus
   for the marvellous Amiga-implementation of GNU C++
   (though I used my own, independent library and startup-code, not
    the GNU-stuff)

... and of course anyone who reported bugs or registered!

1.28   Infos for programmers

I'd really like to see other programs, especially BBS-softare, to
support TWC not only as another transfer protocol, but a advanced
and more comfortable way to exchange data. Many people asked me
why I haven't built TWC into a XPR library. This is not possible
with the current standard, and I fear this won't change.
If you like to use TWC from external software, and you miss
something necessary in TWC that would enable you to do so, please
ask me. You can reach me via email in UseNet under

  lkv@mania.robin.de

Good luck,

Lutz Vieweg

1.29   Version history

3.26
        When the connection was suddenly interrupted, TWC often
         refused to receive new data for a while, after the
         connection has been established again. This resulted
         from a missing buffer-flush. Fixed
        TWC is now compiled with GNU C++ 2.5.7

3.25
        Ooops, in release 3.24 multi-select wasn't possible. Fixed..
        TWC is now compiled with GNU C++ 2.5.3

3.24
        When started from Workbench without any other
         icons selected, an empty entry in the to-send
         list was generated. Fixed.

3.23
        I don't know why the hell the OS does not scroll
         autoscroll screens when "SA_OVERSCAN" isn't set,
         but now it's fixed...
        Notification on end of transfer is now only done
         then the files-to-send list is empty.
        Changed the width-calculation for the chat- and
         status-windows, now characters shouldn't be
         "eaten" anymore...

3.22
        Some older versions of commodities.library are
         buggy - this lead to crashes when hotkeys where
         used. Applied a workaround.
        For the same reason I had to change the default
         hotkey-descriptions. Some older versions of
         commodities.library do not understand "NUMPAD".
         New defaults are F10 and F9

```
3.21
            Default screen-mode changed to interlace
            The default screen-to-front hotkey description
             was invalid, changed to NUMPAD /
            Some people don't like to read what is written
             in gadgets, so they asked me to arrange the
             OK and CANCEL gadgets in the requesters in a
             specific order. Done: OK is now left, CANCEL right.

3.20
            Many changes, improved GUI, first sound-support
             routines, bug-fixes, better guide, ARexx-Port,
             ability to use externally opened devices etc.,
             too much changes for a detailed description
             here. Please take a look at the whole guide...

            Sound support and dial-function not ready, yet.
```

(changed version numbering back to the old style X.YZ, this is
 less misunderstandable)

```
101         Cosmetic corrections, functions now available
            via menues and command-keys

100         First public release. How long will it take
            until the first bug is found the beta-tests
            did not show?
```

1.30   Ideas for possible future extensions of TWC

```
- Sound-support and the dial-function will be completed
- Less linguisitc mistakes in the documentation (english is
  not my native language).
- Improved BBS-software Interface
- Video-support (this is meant seriously)
- remote command exectution
- maybe a screen-mode requester... :)
```