MakeCD

COLLABORATORS			
	TITLE : MakeCD		
ACTION	*NAME*	*DATE*	*SIGNATURE*
WRITTEN BY		February 12, 2023	

REVISION HISTORY			
NUMBER	DATE	DESCRIPTION	NAME

Contents

Chapter 1

MakeCD

1.1 english/FD/MakeCD.guide

```
                          ********************************************

                              MakeCD

                         Version 2.5 (09-12-1997)

                             English User Manual

                   *******************************************
```

We are sorry. We could not finish the English manual for MakeCD 3.0. If you understand German, please use the German manual instead. We hope that the manual for MakeCD V2.5 helps you to understand how to use MakeCD V3.0 -- although there are a lot of changes in the graphical user interface. If you don't understand how to use MakeCD V3.0, have a look at the bubble help or wait until we have finished the manual and get MakeCD V2.5 in the meantime. It is available from our homepage (`http://makecd.core.de/').

Please understand that we can not answer questions like `What does this gadget mean and how can I do this or that', because it would delay the English manual even more.

1.2 MakeCD.guide/MWARN

```
Crack warning:
     We received some "100 % cracked" versions of MakeCD which did not
     at all behave like fully registered versions. Instead, they
     pretend to work, but the result is not what you expected. Please
     do not use them and don't blame us for these versions! Instead,
     download the only slightly limited version from the MakeCD
     homepage: `http://makecd.core.de/'

     If due to working cracked versions of MakeCD the number of people
     registering MakeCD gets lower, the authors of MakeCD will stop all
     development as it will be pointless for them to continue further.
     This will mean no new drivers and no new features (like DAO). If
     you want to use MakeCD, please purchase MakeCD.

Registered users:
```

In your own interest, you should never use cracked/modified versions of MakeCD. Instead, always get unmodified versions and unlock them using your registration number. Also, never give away your registration number.

Test binaries:
You can check the most important binaries of this MakeCD distribution for changes by a virus/cracker. Just click on the following button. But please note that the virus/cracker could have changed our 'CRCList-binaries', so the test succeeds, although somebody has tampered with the binaries. In order to be totally sure, you have to check the PGP signature on 'CRCList-binaries'. You can find the PGP public key file on our home page.

Please use this test before you register MakeCD using the registration window, because this registration causes changes in the binaries.

>>> TEST MakeCD binaries! <<<

Note that you must have started this guide from Workbench in order to perform this test, otherwise the test might not find all files and might not work.

1.3 MakeCD.guide/MLEGL

Legal
*****

As with most other software, there are legal conditions associated with MakeCD and you must read them before you first use the program. These conditions shall be interpreted according to the laws of your country. The German text of these conditions shall take precedence over any translation thereof for the purposes of legal interpretation.

1.4 MakeCD.guide/LCPYR

Copyright
=========

1.5 MakeCD.guide/LDISC

Disclaimer
==========

The authors shall not be held responsible for any damages or losses, direct or consequential, resulting from the use, or inability to use the software. This applies even if the authors have been made aware of the possibility of losses or damage.

1.6 MakeCD.guide/LALTR

Alterations
===========

MakeCD shall not be altered (patched). Those who do this anyway, should not be surprised by extremely uncomfortable side-effects.

Of course, MakeCD shall not be distributed if it has been altered -- even when the altered software was based on the freely distributable version.

If a modification is thought to be useful, it’s worth your while to contact the Authors, who may after all have the desired function in the next version.

1.7 MakeCD.guide/LTRAD

```
Trademarks
==========

This documentation mentions various hardware and software by name. Such
names are often protected Trademarks and their mention in this document
shall in no way damage their legal status.
```

1.8 MakeCD.guide/LLICA

```
                Licence Agreement
=================

This contract is a legal agreement between you (as the user) and the
authors of MakeCD. You accept the conditions of this contract by the
use of the software.

The registered version with a valid registration number entitles you to
use a single copy of the software on one computer (i.e. at only one
location for one unit). If you received a TAO and a DAO registration
number, you must not use these two numbers on two different computers.
You may use them only on one single computer at one single location.

Further details about the licence can be found in the section

                Registration fees
                .

If you want to sell a registered version of MakeCD to another person,
both parties have to inform us. Then, we will lock the old
registration number and the new owner of this licence will get a new
registration number after paying a handling charge of 5 DM plus
shipping costs. If you are registered for Disc-At-Once, you must always
sell both, your TAO and your DAO registration number to only one single
person.

If you use the unregistered version of MakeCD, you may use as many
copies as you like simultaneously, and distribute copies to as many
people as you like at no charge. If you use MakeCD for more than 4
weeks, you must get a licence, even if the functionality of the
unregistered version of MakeCD fulfills your needs. There is one
single exception: if you use MakeCD only to read/play CDDA data, and if
you don't create ISO images or write CD-Rs, you don't have to register.
However, in that case you must not expect any support from the authors.

An unregistered version of MakeCD can be recognized by the startup
requester for registration number and user address. You are dealing
with an unregistered version when all fields are empty (no default
values). It is safest to only pass on the original archive -- nothing
can go wrong that way.
```

1.9 MakeCD.guide/LREGI

```
                Registration
============
```

In case you like MakeCD, you should register. The development of MakeCD is very time and cost extensive and we really ask you to support us if you like it.

However, if the unregistered version of MakeCD does not work with your configuration, please do not register and stop using MakeCD. Some people obviously think we must add support for their systems after they have registered. But that's not how things work. Of course, we do our best in supporting all systems, but in many cases, we can't support their systems, e.g. because they have SCSI troubles or because we don't have programmer docs for their CD writers. Sorry. Since we don't like to have dissatified users, we really ask you not to register if you are not satisfied with the current version of MakeCD and to stop using MakeCD.

If the unregistered version of MakeCD does not support your hardware, the registered version won't support it either. In that case you should check for updates of MakeCD from time to time and register after you found a working update.

We reserve the right to lock single registration numbers in future versions of MakeCD without mentioning any reasons.(1)

Registration numbers are valid for the actual version and often also for following versions. If there are big new features, we might request an update fee.

Restrictions
    Restrictions of the unregistered version

Prices
          Registration fees

Supply sources
  Companys, where you may buy MakeCD

---------- Footnotes ----------

(1) Of course we do not plan to do that without having a good reason.

1.10 MakeCD.guide/LLRST

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Restrictions of the unregistered version
----------------------------------------
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Compared to the registered version, the unregistered version has a few built-in restrictions:

- The name of the CD-ROM and the "Publisher" entry in the primary volume descriptor cannot be changed.
- You can write a maximum of ten tracks to a CD-R.
- In Disc-At-Once (DAO) mode, you can only burn in test mode. (Using the Track-At-Once (TAO) mode, the unregistered version of MakeCD can do both, burning really and in test mode).

Cracked versions of MakeCD often don't work at all.

1.11 MakeCD.guide/LREGF

Registration fees

As we think that about DM 200,- to 400,- is a very painful amount of money for a non commercial user to spend on this, we thought up something to still make some profit (as all the other vendors of mastering software):

There are three classes of licensing. The more "commercial" the user uses our software (and the more money he makes with it), the higher his or her registration fee will be for MakeCD. Non commercial users pay only a small fee. Users who burn CD-ROMs for anyone for a fee pay a currently common amount. Users who have their mastered CD-ROM's duplicated commercially at a CD manufacturer (and usually sell them) pay a fee that has to be negotiated with the authors individually. We can think of several ways to license MakeCD here. Just contact us!

We hope that this is a fair compromise. Why should someone who creates CD-ROM's just for fun pay the same amount as someone who makes large amounts of money on duplicating and selling CD-ROM's?

Please remember that the development of MakeCD could not have been done without investing considerable amounts of money. If you use the software, consider registering seriously and support further development and enhancements to MakeCD as they will be costly, too!

Private, non-commercial usage
: There is a registration fee of DM 75,- (DAO: add 40 DM). Any CD-ROM's created with MakeCD may only be used for your private, non-commercial needs. "Publisher" cannot be modified.

CD-ROM recording service, non-commercial duplication.
: The registration fee is DM 300,-. This is in the range of other currently available software of this type for the Amiga. The recorded CD-ROM's may be sold to the respective customers who may not re-duplicate them again for commercial purposes. CD-ROM's created by MakeCD with this license may not be used as masters for

pressing CD-ROM's. An exception is the non-commercial duplication with CD-R's. "Publisher" cannot be modified.

CD-ROM Manufacturer, commercial duplication.
We don't have a standard price for this at this time. Please contact either Angela Schmidt or Patrick Ohly. We'll work up a license together then. This license allows you to press CD-ROM's with masters created by MakeCD. You will also be able to change "Publisher" as needed.

The Application-ID field will always contain the serial number (which isn't the same as the registration number) of the registered version.

A printed manual with more than 100 DIN A4 pages is also available, but so far only the German manual of MakeCD V3.0 is finished. Once it is done, you will have the opportunity to order it at 15 DM extra.

Additionally to the licence fee and/or manual as described, we have to charge some shipping costs:

Postage and Packing within Germany
5 DM for floppy only, or floppy with manual (only German manual available so far)

Postage and Packing within Europe
5 DM for floppy only
10 DM for floppy with manual (only German manual available so far)

Postage and Packing outside Europe (Air Mail)
10 DM for floppy only
20 DM for floppy with manual (only German manual available so far)

Express Delivery
15 DM extra. The Registration will be processed immediately and sent via Express delivery. Yet even normal registrations will be processed quickly by my sister.

Please understand that Katrin likes to take the occasional holiday, usually around Whitsun or in August or September, as well as at the start of January. Registrations cannot be processed at these times (usually about one to three weeks) and we beg your understanding.

C.O.D. (only in Germany)
9.50 DM extra. This only makes sense if registering by telephone.

A normal MakeCD Private registration without manual will therefore cost 80 DM within Europe, including postage and packing. If you also want to use the DAO feature, it's 120 DM. Express registration of MakeCD Private with manual and delivery to the USA would cost 75+15+20+15=125 DM (Registration + manual + postage + Express).

You can send a cheque within Germany; the preferred and safest method. Of course you can send cash at your own risk. Inside Germany, the registration can also be done via C.O.D. (for an extra 9.50 DM; this already includes the 3 DM extra that your postman will always take for ringing at your door).

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You can also send a cheque from outside of Germany but please consider
that this can present some difficulties and disproportionate costs (20
DM is not unusual). Please make sure that there is enough left over to
pay your registration after all the additional costs have been paid --
otherwise your registration cannot be completed.

As foreign cheques often cause trouble (Eurocheques in DM and cheques
from a German bank are fine, though), we prefer foreign registrations to
be made by postal money order or using cash (preferably DM, or US
Dollars of equivalent value plus 10 %).

Send your registration (in German, English or if needed, in French) to:

Katrin Schmidt
Finkenweg 26
89233 Neu-Ulm
Germany
Tel.: 0731/712316 (9:00 to 21:00 CET)

In case you have further questions, have a look at the
                FAQ
                .
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1.12 MakeCD.guide/LCOMP

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Companys, where you may buy MakeCD
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If you, for one reason or the other, won't order MakeCD directly form
the authors, you can buy it also at one of the following distributors,
or at the dealers which are getting software from these distributors:

HiSoft
     Distributor for Great Britain (English version)
     HiSoft Systems
     The Old School
     Greenfield
     Bedford MK45 5DE
     England
     Telefon: 01525 718181
     Fax: 01525 713716
     EMail: sales@hisoft.co.uk
     Web: http://www.hisoft.co.uk/
     Price: £39,95 including printed English documentation

Oberland Computer
     Distributor for Germany/Austria/Switzerland (German version)
     Oberland Computer
     In der Schneithohl 5
     61476 Kronberg/Taunus
     Deutschland
     Telefon: 06173/608-0
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     Fax: 06173/63385
     Web: http://www.oberland.com/
     Price: 99 DM including printed German documentation

Please consider, that you have to get the possible needed support
directly from the respective dealer.

Please note: The versions which are not bought directly from the
authors, but from one of the distributors are delivered with a special
registration key. This key can not be used to register the Internet
versions (updates) of MakeCD.

To be able to use also the version available on the Internet, you have
to send your address to the authors of MakeCD.  This can be done with
the included registration card, or it can be done directly by your
dealer. Shortly after having send your address to the authors, you will
get your registration key without any further costs.  This new key can
also be used with the Internet versions and updates.  The only
difference is that you can not get any support directly from the
authors, but you have to contact the dealer where you bought your copy
of MakeCD.
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1.13 MakeCD.guide/MFEAT

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Feature list of MakeCD
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   · easy to use, even for beginners

   · AMIGA protection bits and file comments in CD-ROM images
     MakeCD was the first program that brought this great feature to
     you. Meeting Pearls IV was mastered with MakeCD.

   · online images (no second partition required)

   · flexible CD copying

   · plays CDDA data from CD or from file

   · supports ISO 9660 and Rock Ridge extensions

   · requires relatively little memory while generating the ISO 9660
     structures.

   · supports CDTV and CD32 (bootable CD-ROMs possible)

   · Multivolume and Multisession support

   · The ISO image can be created on block-orientated devices (e.g.
     hard disk) and tested before writing a CD-R

   · CD Extra support

   · All source directory trees for the ISO image are optionally put
```

into one distinct subdirectory of the image's root directory

- locale support (at this time English and German)
- online help (Bubblehelp, can be disabled)
- font-sensitive layout
- style guide adhering (opens e.g. on a Public Screen)
- writes both data and audio tracks
- modular concept (additional CD writers can be supported if required)
- almost all CD writers are supported
- recovery mode (dependent on CD-R driver!)
- best value for your money, especially for non-commercial users
- compatible (tested on many different configurations)

1.14 MakeCD.guide/MHARD

Supported CD-Writers and CD-ROM drives
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If you wish to know more about support for different CD writers, please do read the compatibility list. In general, the CD writers listed below are currently supported.

Please take notice of the fact that the programmers of other CD recording software are using our list without being aware of the fact that for some of the CD writers mentioned below special treatment is required to make them work correctly with the corresponding driver. Thus, caution is advised concerning compatibility lists resembling ours that are offered with other CD recording softwares. Our lists are not copied from other lists. They are the result of our own investigations into the differences and similarities between those CD writers.

The following CD writers are ours, therefore those are to be supported very easily. The same applies for all CD writers based on those mentioned below:

- Philips CDD 2600
- Ricoh MP6200S
- Sony CDU 926S
- Yamaha CDR 100
- Yamaha CDR 400t

We did possess the following CD writers for some time to test the drivers of MakeCD. But we have already returned them.

- JVC XR-W2010
- Matsushita CW-7501
- Philips CDD 2000
- Plextor PX-R24CSi
- Yamaha CDR 400c

The following CD writers are generally supported by MakeCD. CD writers marked with an "(*)" haven't been tested yet, but theoretically these should work, too.

- JVC or TEAC compatible CD-writer:
  - Hi-Val CD-R (*) (read 'doc/Compatibility')
  - JVC XR-W2001 (*) (read 'doc/Compatibility')
  - JVC XR-W2010 (read 'doc/Compatibility')
  - JVC XR-W2012 (read 'doc/Compatibility')
  - JVC XR-W2020 (read 'doc/Compatibility')
  - JVC XR-W2022 (read 'doc/Compatibility')
  - JVC XR-W2626 (*) (read 'doc/Compatibility')
  - Pinnacle RCD-1000 (*) (read 'doc/Compatibility')
  - Pinnacle RCD 5040 (*) (read 'doc/Compatibility')
  - Smart & Friendly CDR2006 Plus (*) (read 'doc/Compatibility')
  - TEAC CD-R50S
- MMC/ATAPI compatible CD-writer:
  - DynaTek CDE260R (*)
  - Dysan CD-ReWritable CRW-620
  - HP CD-Writer Plus 7100e (*)
  - HP CD-Writer Plus 7100i (*)
  - HP CD-Writer Plus 7110e (*)
  - HP CD-Writer Plus 7110i (*)
  - Microboards PlayWrite 2060R (*)
  - MicroNet Technology Plus 4x6 (*)

- Mitsumi CR2600TE (*)
- Philips CDD 3600 (*)
- Philips CDD 3610 (*)
- Plextor PX-R412Ce (*)
- Plextor PX-R412Ci (*)
- Ricoh MP6200I (*) (we don't expect any problems here)
- Ricoh MP6200S
- Ricoh MP6201S
- Ricoh MP6211S (*) (we don't expect any problems here)
- Smart & Friendly CDR4006 (*) (we don't expect any problems here)
- Traxdata CDR 4600 (*) (we don't expect any problems here)
- Yamaha CDR 200
- Yamaha CDR 400c
- Yamaha CDR 400t
- Yamaha CDR 400tx
- Yamaha CDR 401t (*)
- Yamaha CD-RW 4001 (*)

- Panasonic/Matsushita compatible CD-writer:
  - Compro CD-R 7501-INT (*) (we don't expect any problems here)
  - Compro CD-R 7502-INT (*)
  - Creative Labs CDR4210 (*) (we don't expect any problems here)
  - Matsushita CW-7501
  - Matsushita CW-7502 (*)
  - Panasonic CW-7501
  - Panasonic CW-7502 (*)
  - Plasmon CDR-4240
  - Plasmon CDR 480 (*)

- Philips CDD 2000 CD-Writer family:
  - Grundig CDR1001PW

        · HP CD-Writer 4020i

        · Kodak PCD225 (*)

        · Mitsumi CDR 2401

        · Philips CDD 2000

        · Philips CDD 521 (no test mode!)

        · Philips CDD 522

        · Plasmon CDR4220 (*) (we don't expect any problems here)

    · Philips CDD 2600 CD-Writer family:
        · HP CD-Writer 6020i

        · HP CD-Writer 6020es

        · Philips CDD 2600

        · Wearnes CDR632P

        · Traxdata CDR 2600 (*) (we don't expect any problems here)

    · Sony compatible:
        · Sony CDU926S

        · Microboards PlayWrite 2000 (*)

        · Optima DisKovery 650 CD-R (*)

        · Smart & Friendly CDR1002 (*)

        · Smart & Friendly CDR2004 (*)

        · Smart & Friendly CDR2006 Pro (*)

        · Sony CDU920S

        · Sony CDU924S

        · Sony CDU940S (*)

        · Sony Spressa 9211 (*)

        · Sony Spressa 9411 (*)

        · Sony Spressa 9611 (*) (we don't expect any problems here)

    · Yamaha CDR 10x (and compatible drives):
        · Yamaha CDR 100

        · Yamaha CDR 102

        · Yamaha CDE 100

        · Yamaha CDE 102

        · Plasmon CDR-4400

        · DynaTek Automation Systems CDM400 (*)

        · DynaTek Automation Systems CDM240 (*)

        · Microboards PlayWrite 4000 (*)

        · MicroNet Technology MasterCD Pro (*)

        · Procom Technology PCDR-4x (*)

        · Smart & Friendly CDR4000 (*) (we don't expect any problems here)

        · Smart & Friendly CDR1004 (*) (we don't expect any problems here)

    · Ricoh/Plextor (and compatible drives):
        · Plextor PX-R24CS(i)

        · Ricoh RO-1420C

        · Ricoh RS-1420C

        · Turtle Beach 2040R (*) (we don't expect any problems here)

Additionally, MakeCD provides support for the following CD-ROM drives:

    · ATAPI CD-ROM (with CDDA reading)

    · NEC CD-ROM (with CDDA reading)

    · Pioneer CD-ROM (Sony compatible)

    · Plextor CD-ROM (with CDDA reading)

    · Sony CD-ROM (with CDDA reading)

    · Toshiba CD-ROM (with CDDA reading)

    · any other CD-ROM drive (without CDDA reading)

1.15 MakeCD.guide/MINTR

```
                Introduction to CD writers, MakeCD etc.
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```

This introduction was written to help you understand CD-Rs, CD writers and all related information. Additionally, valuable information on how to use MakeCD is included.

CD writers
Differences: CD writers, CD-ROM drives

CD-Rs
CD-Recordables

Buffers
Buffering

Tracks & sessions
Interesting facts about tracks and sessions

Fixation
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Multivolume
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CD-Extra: audio and data on one CD-R

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ISO 9660
ISO 9660 and its background

Rock Ridge
Rock Ridge and AMIGA attributes

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Joliet
Joliet, the Windows95 extension

Romeo
Romeo, another extension

Track-at-once
TAO: Momentuous notes about track-at-once

Disc-at-once

1.16 MakeCD.guide/MICDW

```
Differences: CD writers, CD-ROM drives
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CD writers usually resemble CD-ROM drives being equipped with either tray or caddy.

In general, CD writers are capable of reading from CDs and CD-Rs and writing to CD-Rs. Those are basically CDs that can be written to. Due to the fact that the reading/writing head used for writing to the CD-R is significantly heavier than that of a conventional CD drive, it can't be moved as quickly as that of a CD-ROM drive and the average transfer rate and seek rates will be worse than that of a normal CD-ROM drive.

Nevertheless, CD writers can be used for reading CDs and CD-Rs. Just like conventional CD-ROM drives, CD writers can be mounted via a CD filesystem and then be used to access CDs on your workbench screen. To do so, just enter the device name (Device name, ie. 'scsi.device') and device number (unit number) of the CD writer instead of the CD-ROM drive's values during the installation of the CD filesystem. Of course, you can also modify a mountlist entry (or 'DEVS:DOSDrivers/CD0') accordingly.

If you mount a CD filesystem on the CD writer whilst burning a CD-R, please make sure that the filesystem doesn't attempt to access the CD writer as it could mess it up then. It could result in a defective CD-R. While MakeCD accesses your CD writer, it tries to recognize and lock all CD filesystems that are mounted on your CD writer. Unfortunately, this does not always work due to technical reasons.

1.17 MakeCD.guide/MICDR

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CD-Rs, CD-Rs
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CD-Rs look like CDs and are mediums that can be written to with CD writers. After the process of writing, CD-Rs may, in general, be used with any CD player or CD-ROM drive.

In contrast to conventional silver CD-ROMs, CD-Rs are available in green, golden or even blue.

Further distinctions between CD-ROMs and CD-Rs concern the CD-R's
labelling surface. Some have a big labelling surface, other only a very
small one.

If labelling is required, do not use peaked objects and write only onto
the labelling area. Damaging the label surface will always damage the
data layer situated immediately below.

Take care when using additional labels. Labels attached on just one side
will almost certainly make the CD-R wobble inside the CD-ROM drive.
Several people had to find out that the removal of the label also
removes some of the golden colour (reflective layer) of the CD-R's
surface. In that case you can only use the CD-R as a 'coaster'.

Be sure to buy larger quantities only of those CD-Rs that you have
already tested and that actually work on your system. Some CD-Rs may
survive the writing process but later fail on some CD-ROM drives. Some
drives may read those CD-Rs flawlessly while others may take a very
long time to read and still produce in most cases read errors.

We have had bad experiences with Toshiba drives and certain CD-R brands.
Please take notice of this fact.

1.18 MakeCD.guide/MIBUF

```
                Buffering
=========
```

Once the process of writing has started, the CD writer has to write all
the data to CD-R without interruption. While in

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                Track-at-once
                  mode, at
```

least the finalization of the started track is required.

While in

```
                Disc-At-Once
                  mode, the whole CD-R has to be finished.
```

The reason for all this is, that the CD writer writes the data to CD-R
several times to allow easier restoration in the event of a defect.
While writing the block N, some data of blocks N-1 and N+1 are
incorporated into block N simultaneously. If the data of block N+1
doesn't exist, block N logically cannot be written.

For that reason, programs for CD writers and the CD writer itself
require adequate buffering to ensure that the flow of data never stops.
This is because the CD writer may later restart writing but fail to
fill the gap caused by the interruption. CD writers usually include an
internal buffer of 512kb to 2meg. MakeCD additionally adds its own
buffer to attempt to avoid the eventuality of the CD writer's buffer
running low due to a slow flow of data.

If reselection for the CD writer is turned on, the SCSI bus will be
blocked for a short time only while MakeCD sends data to the CD writer.

With reselection turned off, the CD writer will block the SCSI bus most of the time preventing you from reading data from the same SCSI bus.

Reading data from the same SCSI bus with reselection turned off, the internal buffer of MakeCD will almost certainly run empty. In this case, a huge buffer of the CD writer comes in handy.

If you have to turn reselection off for your CD writer due to SCSI problems, try to read the data from another SCSI bus or from an IDE controller. Otherwise, the internal buffer will only be partly filled causing the risk of buffer 'underrun'.

If you neither have another SCSI host-adapter nor an IDE controller as the source for your data, you will have to use the almost empty buffer of MakeCD. Then, turn 'parallel reading/writing' off in the preferences window. This will slightly improve the per- formance. In all other cases, turn on 'parallel reading/writing'. Make sure to check your system's stability in test mode!

1.19 MakeCD.guide/MITUS

```
Interesting facts about tracks und sessions
===========================================

A finalized CD-R or a CD consists of one or more sessions. Each
finalized session incorporates one or more tracks. A track can only be
part of one session. A CD-R with multiple sessions may look like this:

     ---- Lead-In (start of CD and 1. session)  ---- (1)
     ----               track 1                 ----
     ----               track 2                 ----
     ----               track 3                 ----
     ----    Lead-Out  (end of 1. session)      ----
     ----    Lead-In (start of 2. session)      ---- (2)
     ----               track 4                 ----
     ----               track 5                 ----
     ----    Lead-Out  (end of 2. session)      ----
     ----    Lead-In (start of 3. session)      ---- (3)
     ----               track 6                 ----
     ----    Lead-Out  (end of 3. session)      ----
     ----    Lead-In (start of 4. session)      ---- (4)
     ----               track 7                 ----
     ---- Lead-Out (end of CD and 4. session)   ----

Creating a new track requires a comparatively small capacity - about
300kb or 152 blocks plus the actual data for the new track that must be
at least 600kb. In contrast, a new session takes up 22.5meg for the
fixation of the first session and 13.5meg for the fixation of every next
one plus the actual data.

The more sessions a CD or CD-R incorporates the longer it takes the
CD-ROM drive to read the table of contents (TOC).  Given the example
above, the index of tracks 1 to 3 (track list) would be stored at (1),
```

that of track 4 and 5 at (2), that of track 6 at (3) and that of track 7 at (4). Therefore, the drive accesses four positions on the CD or CD-R to read the complete track list (TOC).

Older CD-ROM drives or CD players having no multisession capabilities ignore the fact that more tracks are stored at (2) and thus access only tracks 1 to 3.

While some CD writers are capable of displaying unfixed tracks in the track list (TOC), others require special commands to access those tracks. CD-ROM file systems can only recognize those tracks if the CD-R is situa- ted in a CD writer (not a CD-ROM drive) and if that CD writer displays these tracks in the track list. If required, MakeCD additionally reads the PMA (a special area of a CD-R) to create a complete track list. CD-ROM file systems cannot offer you this feature.

Read errors may occur resulting in tracks being left out of the track list. This is commonly found with CD-Rs that contain many sessions. Reinserting the CD-R usually does the trick.

CD-ROM drives generally cannot read tracks from unfixed sessions while CD writers can. A CD-ROM drive will only read the complete CD-R once it is fixed otherwise it will read only the tracks that have been fixed.

If you intend to use the CD-R exclusively with your CD writer and if your CD writer shows unfixed tracks in the TOC, you may refrain from fixing the session for the time being to save space. You may then add more tracks (including data tracks) and fix the session or CD at a later stage. Thus, you may create multisession tracks without fixing the CD-R, although the term "multisession" doesn't quite fit here. The function of such a CD-R does not differ from that of a multisession CD-R incorporating fixed data tracks.

1.20 MakeCD.guide/MISCF

Fixation of a session or CD-R
==========

Users are often confused over whether to fix a session or a CD-R. Hence the following explanation:

- Once the CD-R is fixed, you cannot add any more data to it. The CD-R can then only be read from.

- Fixing a session automatically creates a new session. All data on the CD-R from the sessions up to the last fixed session may be read.

- Not fixing the CD-R or the session usually prevents a CD-ROM drive, unlike a CD writer, from reading the data. Afterwards, you may add more data into the same session without fixation of the session, this can save a lot of space.

- Both sessions and the CD-R can only be fixed when the last session

incorporates at least one track. Thus, empty sessions may not be fixed with neither method.

- Having fixed a session prevents you from fixing the CD-R in the next step as the fixation of a session automatically creates a new and empty one which cannot be fixed. The process of fixation of a session is almost identical to that of a CD-R except that in the latter case no new session is created. As a result, the CD-R is completed.

- If you decide not to add any more data to the CD-R, you should fix the CD-R and not just the session. This is due to the fact that it can take some drives significantly longer to read a CD-R that has had only its sessions fixed thus causing them to search for data in the last empty session where they will only encounter read errors as there is no more data.

1.21 MakeCD.guide/MITST

What happens during test mode?
==============================

There is a gadget both in the preferences and the writing window that lets you turn test mode on or off. But what happens during test mode?

Once you turn on the test mode, the CD writer won't write for real but just pretend to do so.

MakeCD sends datas to the writer as if test mode was turned off. The writer then performs almost the same, except that the laser is not activated and thus the CD-R is not written to.

Given the fact that the process of writing in real mode and that in test mode are almost identical, the latter is just perfect to find out whether SCSI bus hangups may occur or whether the data is sent at the required speed.

During test mode, most CD writers retain which tracks were written at what place. Those tracks are displayed in the target CD-R window track list although they do not really exist. Please note that some CD writers mix up information when sessions or the CD-R are fixed in test mode.

We therefore recommend to each user of MakeCD to go through the process of test mode prior to the actual writing. Writing in test mode is also advised when reading data from a slow source drive or in the case of reading data not from an image file but directly from your hard disk (on-the-fly). The stream of data may cease abruptly especially with directories that contain many small files. Finding this to be true is significantly less costly in test mode than it is in real mode. ;-)

1.22 MakeCD.guide/MIMUS

```
How multisession works
======================

What is multisession? Once you create a CD-R, you will sooner or later
write the first data track. So far, the CD-R is a conventional CD
holding data. Provided there is still free space left on the CD-R you
may want to use it. This is where multisession comes handy enabling you
to incorporate an older track into a new one.

For that, MakeCD has to read and remember the contents of this
(normally) last data track. MakeCD retains the position on the CD-R
where the data is stored. The program then seeks all information about
the new data from hard disk except the actual contents of those files.
The table of contents written into the new track contains information
on both the data of the old track as well as on the new data. As the
actual data of the first track is already stored on the CD-R, all but a
short reference to it is required. The data from hard disk however
still has to be written to CD-R.

In the case of a CD-R consisting of two tracks of which the latter
incorporates data of the first one, only the second is added to the
third track. If you forgot to add the data of the first track to the
second, MakeCD allows you to incorporate both data from first and
second track into the third. Data from all three tracks are then
accessible through the third track.

How does this work with MakeCD?

MakeCD offers a very flexible way of creating multisession CD-Rs. You
select the tracks to be incorporated into an already existing track via
the 'ISO settings window'. That is the same window that lets you select
directories to be included in the image file. In the case of identical
file names, the file of the track or directory scanned first will be
selected and all other identical file names will be ignored.

After selecting tracks and directories, you may write to the CD-R as
usual.

MakeCD version 2.1 upwards has this multisession feature.
```

1.23 MakeCD.guide/MIMVC

```
                How to create multivolume CD-Rs
================================

A CD-R can hold several tracks that are recognized as individual volumes
by the filesystem provided the filesystem supports multivolume CDs and
CD-Rs. To achieve this, write the tracks and fix them as soon as you
want a CD-ROM drive to be capable of reading them.

For instance, if you intend to write three tracks in a single operation
```

and later want to read those tracks in a CD-ROM drive, fix the session (or the CD-R) as soon as you have written the tracks. If you intend to write the tracks separately and want to read the CD-R in a CD-ROM drive in between, you will have to fix the session before reading the CD-R in a CD-ROM drive. Fixing the current session is required, no matter whether one or more tracks were written into this session since the fixation of the preceding session.

Each track of a multivolume CD-R corresponds to an independent volume, as a hard disk can be divided into several partitions.See
Fixation
.

The major difference between multisession and multivolume is the fact that tracks of multivolume CD-Rs cannot contain data from previous tracks. Multisession on a hard disk would look like this: the first partition had to be a conventional one, the second would hold new data and links to all data on the first partition and the third partition would contain new data and links to all data on the second partition etc. Implementing multisession on hard disks would be rather confusing and useless. In contrast, the use with CD-Rs makes sense and is advised given the fact that multivolume filesystems are rarely used.

A filesystem supporting multivolume would either give access to all tracks (partitions on hard disk) or let you, at least, choose the desired track (partition).

MakeCD version 2.0 upwards is capable of creating multivolume CD-Rs. Just perform as described above. Naturally, you will need a filesystem that supports multivolume to access the volumes (tracks), e.g. CacheCDFS from the IDEfix '97 package.

1.24 MakeCD.guide/MICDE

CD Extra: audio and data on one CD-R
====================================

CD Extra holds the option of a CD-R containing both data and audio (mixed CD-R) that performs in a CD player like a conventional audio CD which means that you don't have to skip the first track. The computer will still recognize the included data tracks. And this is how it works:

Burn all audio tracks and fix this first session. That's how your CD player recognizes the audio CD. Afterwards, write a data track within the following session. A filesystem with multisession support detects this data track and allows access to it.

MakeCD version 2.0 upwards has the option to create such CD Extra CD-Rs. Just write to your CD-Rs as described above.

1.25 MakeCD.guide/MIMIM

```
Mixed Mode: audio and data on one CD
====================================

A Mixed Mode CD-R incorporates one data track and one or more audio
tracks. The data track is always the first track followed by audio
track(s). The session must only be fixed after the audio track(s) and
not in between.

Create a list of tracks with MakeCD starting with the data track and
continue with as many audio tracks you like. Then write to the CD-R.

Any CD-ROM drive will access the data track as no multisession feature
is required.

When used with a CD player, skip the first track as it is a data track.
Please make sure not to play the first track of a Mixed Mode CD or CD-R
as this may damage your hifi equipment if your CD player is one of those
that expect audio tracks only.
```

1.26 MakeCD.guide/MIISO

```
ISO 9660 and its background
===========================

ISO 9660 is a very old filesystem that was developed to allow almost
every computer system to access CDs.

Out of regard for the then very popular PCs, running under MS-DOS, file
names can only consist of capitals A-Z, numerals 0-9 and the
understroke character '_'.

ISO level 1 is additionally restricted to the 8+3 standard. File names
must not exceed eight characters in front of and three characters behind
the dot. The dot must be present and at least one character, either
before or behind the dot is required.

ISO level 2 is more flexible - it allows up to 31 characters including
the dot. But the same restrictions as above apply: file names must
contain one but only one dot and dots are not allowed for directory
names at all.  Additionally, small letters or even vowel mutation are
not allowed.

The restrictions above cannot be accepted for the AMIGA as a file and
its corresponding icon do not match them. Under the ISO definitions,
the file would miss a dot and if a dot was added, the icon file
contained two dots, as itself consists of the file name and the ending
'.info'. But two dots do not comply with the ISO restrictions.

For this reason, it has become a common habit within the AMIGA
community to forget about all the restrictions and to use file names as
desired. Thus, MakeCD offers a feature called the 'ISO 9660 AMIGA'. If
```

selected, MakeCD uses the file names as stored on your hard disk
without change.

ISO 9660 has a further restriction. There must be no more than eight
directory levels. MakeCD ignores this rule and writes as many levels as
selected. AMIGA filesystems work flawlessly with more than eight
levels, but an option to automatically move directories levels up is
planned.

1.27 MakeCD.guide/MIRRA

Rock Ridge and AMIGA attributes
==========

Fans of UNIX computers weren't too happy about ISO 9660 restrictions and
defined an extension called Rock Ridge.

A CD or CD-R with Rock Ridge extension is based on ISO 9660 but makes
use of a reserved space within the ISO norm.

Filesystems with support for nothing but ISO 9660 will not detect those
Rock Ridge extensions. Therefore, Rock Ridge cannot confuse the
filesystem.

It is difficult to measure the amount of space that the Rock Ridge
extension occupies. It should roughly be of the order of 50 to 150 bytes
per file or directory, thus very little.

What is the advantage of Rock Ridge?

The possibility to save multiuser attributes for unix systems is of
little importance for the AMIGA. More important is that fact that the
use of file names containing any type of characters is possible through
this extension. There is no need to change characters or to shorten file
names.

A filesystem with support for Rock Ridge also supports ISO 9660 for
technical reasons and will show the Rock Ridge file names if the
extension was used to create the CD-R. Some of those filesystems feature
the option of displaying only the ISO 9660 file names. If your
filesystem fails to show the Rock Ridge file names, check whether some
options are correctly set.

Some filesystems may fail to identify a CD with Rock Ridge extension as
such, because with previous versions of Rock Ridge such as v1.09, the
identification of Rock Ridge was stored on the CD in another way than it
is with version 1.12 which MakeCD makes use of. This is sometimes found
with UNIX file systems and if your filesystem only supports RockRidge
v1.09, ask its maker for an update to v1.12.

Around mid-1996, a new standard based on Rock Ridge was developed
primarily by Angela Schmidt who worked in close cooperation with other
AMIGA programmers and the leading author of Rock Ridge. The standard
has since been accepted by the AMIGA community as it is supported by

all major file systems such as AmiCDFS, AsimCDFS and CacheCDFS. This implementation offers AMIGA protection bits and file comments on CD-R within the Rock Ridge extension.

To save these AMIGA attributes, Rock Ridge extension is required.

You can finally backup your data on CD-R. The advantages: instant access and the AMIGA attributes won't get lost anymore with a suitable filesystem.

1.28 MakeCD.guide/MIHFS

HFS on CD-ROM and hybrid CDs
============================

Apple developed its own format for CDs and CD-Rs due to the limitations and insufficiency of ISO 9660 for the MacOS filesystem: HFS.

MakeCD does currently not support HFS and support is unlikely as, in our opinion, there seems to be no need for it so far.

Hybrid CDs are CDs containing both the HFS and ISO 9660 format. The CD will be mounted as an ISO-CD on an AMIGA or a PC and as an HFS-CD on a Macintosh. As the data can be kept separately in ISO 9660 and HFS, the PC and AMIGA users only have access to their programs and the Mac user exclusively to his/her own.

1.29 MakeCD.guide/MIJOL

Joliet, the Windows95 extension
===============================

Windows95 introduced a new filesystem format named Joliet. It is based on ISO 9660 and supports all standardised characters such as e.g. Chinese symbols. File names are no longer limited in variety, but in length.

MakeCD doesn't support this extension yet. It is however not certain that we will support it.

1.30 MakeCD.guide/MIROM

Romeo, another extension
========================

Romeo, too, is an extension supposed to allow more characters on PCs. MakeCD doesn't support this extension yet and it is rather uncertain

that we will ever implement this feature.

1.31 MakeCD.guide/MITAO

```
TAO: Momentuous notes about track-at-once
=========================================

Most CD writers offer several modes of writing a CD-R. The most common
and important modes are TAO (track-at-once) and DAO (disc-at-once).

The easiest method (for the programmers) to implement is track-at-once.
The program sends the data track by track to the writer and the writer
takes care of the actual writing process.

The disadvantage of TAO is the fact that most CD writers put in a pause
of approximately 2 seconds (152 blocks) between the tracks. This is
annoying when you intend to write a live concert to CD-R using more than
one track, since you don't want to have a pause between the tracks.

DAO, with its own new restrictions, provides a solution to this.

At the moment, MakeCD has support for TAO only. Support for DAO will
follow for certain CD writers.
```

1.32 MakeCD.guide/MIDAO

```
DAO: Interesting facts about disc-at-once
=========================================

Most CD writers offer several modes of writing a CD-R. The most common
and important modes are TAO (track-at-once) and DAO (disc-at-once).

While in track-at-once mode, little gaps between tracks have to be
accepted. With disc-at-once, all tracks can be written without pauses in
between and even the creation of index marks is possible.

The CD-R is however limited to one session using disc-at-once. Therefore
modern CD writers offer SAO (Session-At-Once), so you can write several
sessions in Disc-At-Once mode.

MakeCD doesn't support DAO, but TAO. Support for DAO and SAO will
follow for certain CD writers.
```

1.33 MakeCD.guide/MICMP

```
Which driver is compatible to which CD writer?
==============================================

We have tried to give you as many compatibility tips as possible in the
file 'doc/Compatibility'. Unfortunately, we are not aware of every
existing CD writer and we cannot always tell you which driver you need
for your CD writer or whether we have a driver for your CD writer. But
you can select one driver after the other and try to write a CD-R in
test mode (or without test mode).

If the driver which you have selected is not compatible with your CD
writer, you will usually get an error message. Occationally, your CD
writer will misunderstand a command and will do something undefined with
your CD-R - possibly destroying it.

If you do find a working driver for your CD writer through testing and
if your CD writer is not yet listed in our compatibility list, please
contact us and we will add it to the list.
```

1.34 MakeCD.guide/MINST

```
                Installation
************

In order to install MakeCD it is best to use the added installation
program, based on AMIGA International's "Installer". With versions from
Cover Magazines, MakeCD is already completely installed and the
installation program was left out due to space limitations. In this
case there is no need to read on.

Normally, it should be possible also to start MakeCD directly without
installation.

To install, you start the installation program by a double-click on
"Install".

As you will soon notice, you can select between several languages in the
installation program. Click on the desired language. The installation
program will then communicate automatically with you in this language.

Now only follow the statements very simply and do not be afraid of
clicking on "Help" if something is unclear.

Around the end of the installation process, you can choose, which CD-ROM
and CD Writer drivers should be installed. If you already know
precisely, which drivers you require, you can choose to copy only the
required drivers. Otherwise, install all drivers and then try out which
one is required.  See
                Settings
                .

After you have finished the installation, open the drawer into which
MakeCD was installed and double-click MakeCD.  The registration window
```

will open itself first. If you are registered, you enter your
registration number here. Pay attention exactly to uppercase/lowercase
letters. Only if you type the registration number exactly, MakeCD is
released. It can retain either this state temporarily or store it
permanently. For permanent storage however, you must type in your
complete postal address and then click on "Save". Otherwise, a mouse
click on the "Use" button will suffice.

On the first start of MakeCD, you should change its correct
Preferences
according to your system. After this you can start working with
MakeCD.

1.35 MakeCD.guide/MISTR

User Guide
****

MakeCD is designed to be easy to use. However, we thoroughly recommend
that you read this guide. This will give you a better understanding of
MakeCD, helping you to anticipate and avoid problems.

1.36 MakeCD.guide/MISET

Settings Window

Before using MakeCD, you need to alter the settings to suit your system.

After its first start, MakeCD will normally ask you to enter the settings for your system. Otherwise - or if you wish to alter the settings at a later stage - run MakeCD and use the menu to open the Settings Window.

The following sections explain the function of the fields in the settings window and suggest useful values.

Read
: Read Device (CD-ROM drive)

Write
: Write Device (CD-Burner)

Block Medium
: (There is usually no need to change this value)

Normal Speed
: Write Speed

Audio Speed Reading
: Speed for Audio Reading

Audio Speed Writing
: Speed for Audio Writing

Buffer Maximum
: Buffer Size

Buffer Chunk
: Chunk Size (MaxTransfer)

Permit ExAll()
: Directory Search Function

Test Mode
: CD-Burner Test Mode

Parallel Read/Write
: SCSI Problems -- read these!

Pure Audio Data
: CDDA = Intel or Motorola

IO Error

```
                    Procedure after Error

               Ignore Overflow
                    Buffer Overflow while Reading Audio Data


               Audio Length
                      Audio Data = Multiple of 2352?

               Audio Start
                       Modification of Audio Track Start

               Audio Pause
                       Automatic Removal of Audio Pause
```

1.37 MakeCD.guide/MISRE

```
               Read
----

If you want to read tracks from a CD and burn them on a CD-R without
using an intermediate file, you must have both a CD-ROM drive and a CD
writer (or two CD writers). MakeCD can use the two drives simultaneously
-- the data can be read while the CD is burnt.

The device that you select here is used whenever you select a track. You
can enter the same device used for writing (i.e. your CD-Burner), but
you will need to use intermediate files (image files).

Click on the popup gadget. A device selection window opens -- if you
need any help, please consult the
               FAQ (Frequently Asked Questions)
               .

The device selection window scans your system for device drivers
("Devices"). However, most of the device drivers in your system are not
suitable for SCSI commands and will be filtered out. This means that
often only a few devices drivers are listed -- and even some of these
drivers may not understand SCSI commands. The "NSD" driver (see
"NSDPatch" by Heinz Wrobel) lists only those device drivers which do
understand SCSI commands. There are two types of device drivers which
understand SCSI commands: those which cannot do NSD (although you can
use "NSDPatch" to "teach" these drivers to do NSD!) and those which can
do NSD.

Select the device driver for the host adapter that your read drive is
connected to.

MakeCD then examines all the attached devices and displays them in the
unit list. Select the read device from this list.

MakeCD automatically recognizes many devices and will set the required
MakeCD driver for you. Other devices are not automatically recognized
```

-- you need to set the MakeCD driver yourself for these. Check to see
if MakeCD has set the 'driver' for you. If the driver has not been set,
select it using the popup gadget.

If you are not sure which driver to select, try each driver until you
find one that works. Some drivers can read CDDA files, others cannot.
Some drivers are for CD burners, others are for CD-ROM drives only.

1.38 MakeCD.guide/MISWR

Write

This is where you choose the CD burner used for burning your CD-Rs. See
'Read'.

If you choose the driver yourself, make sure it is suitable for CD
burners. The other drivers cannot control your CD writer!

There is one exception: if you have a CD-ROM driver, but no CD burner,
you can still experiment with the MakeCD by selecting a CD-ROM reader
driver. If you insert a CD-R which is fixed in the last session, you
can create an ISO multisession image. If the last section is not fixed,
the created ISO image will not function correctly once it is burnt using
a CD writer!

1.39 MakeCD.guide/MISBL

Block Medium

Do not enter a value in this field unless you know exactly what you are
doing! If you enter the wrong setting, you could unknowingly format
your hard drive! You have been warned!

You can write the data to a block medium (e.g. directly to hard drive)
rather than to an image file. This is useful if you are going to mount a
CD-ROM file system on the hard drive and test the data. In addition, if
you don't have a CD burner yourself, you can pass on the data in this
form (i.e. on hard drive) to a duplicator for CD-ROM burning.

If you want to enter a value here (don't forget the hazard risk!), click
on the popup gadget. A device selection window appears.

Unlike the device selection windows used for 'Read' and 'Write', the
device does not have to understand SCSI commands -- it must understand
Trackdisk compatible commands. Select the required device.

Next, you need to declare which blocks on this device can be

overwritten. You would normally enter 0 for 'Start Block' and a very high block number for 'End Block'. MakeCD will only overwrite blocks in this region. Please note that the rigid disk block is normally saved from block 0 on the hard drive for AMIGA computers. If you destroy the RDB when using MakeCD, RDB-Salv could be your last hope...

Please note: your setting is only used if you enter 'Block Medium' as the 'Source' or 'Target'.

If you intend using a hard drive (preferably empty) and have correctly filled in the values, close this window using 'OK'.

1.40 MakeCD.guide/MISSN

Normal Speed

Here you enter the burning speed for the CD writer. This value is checked for known devices and corrected if necessary. If your device is unknown, this value is passed on unchanged -- if this value is wrong, a number of side-effects are possible.

You can enter the following values without hesitation:

1
     Single Speed

2
     Double Speed

4
     Quad Speed

0
     Maximum Speed

1.41 MakeCD.guide/MISSR

Audio Speed Reading

Many CD-ROM drives play audio data only at single speed. In addition, there seems to be a loss in sound quality at the higher speeds with some drives. You can set the reading and writing speed for audio tracks separately.

The speeds you can choose here are the same as with 'Normal Speed'. But some CD-ROM drivers ignore the speed setting, in which case the value you entered has no effect.

If you are copying audio tracks directly, the read and write speeds
should match exactly. This is for technical reasons -- a full or empty
buffer can lead to errors in the audio data with some drives. If the
buffer is full and your drive does not produce faulty audio data, you
may set the read speed higher as the write speed.

If you do not know what to enter here, use '1' for single speed.

1.42 MakeCD.guide/MISSW

```
                Audio Speed Writing
-------------------
```

Basically, rules for
Audio Speed Reading
apply. The difference is that
you may set here the writing speed for audio data.

1.43 MakeCD.guide/MISBM

```
                Buffer Maximum
--------------
```

This value sets the maximum buffer size that MakeCD can use. If
reselection (disconnect/reselect) is deactivated and the data is being
transferred from a device on the same SCSI bus, a relatively small
value (e.g. 1000-2000 KB) should be adequate. This is because the
buffer will always be at the lower value with reselect deactivated.

If reselection is activated for the CD burner, or you if are reading
the data from a device that is connected to a different bus (AT bus or
another SCSI host adapter), you should set this value as high as you
can. In this way you reduce the danger of a buffer underrun.

Details on reselection can be found under
SCSI Problems
and

Buffer Behavior
.

8000 is a sensible value for this field, but a value in the region of
4000-20000 should be fine. You can tell if the buffer value is high
enough by running in the test mode.

1.44 MakeCD.guide/MISBC

```
Buffer Chunk
------------
```

You can use this field to set the size of the individual data chunks. MakeCD passes this value to your burner. The value you set must be no larger than half the size of your CD writer's built-in buffer i.e. at least two chunks should fit into the CD writer's buffer.

Some SCSI host adapters have problems transferring large chunks. In view of this, we suggest that you start with a value of 50KB. You can try increasing this value at a later data in the hope of a speed improvement.

If you deactivate reselection and the CD burner is attached to the same SCSI bus as the read device, we recommend that you set a small chunk size.

1.45 MakeCD.guide/MISAE

```
Permit ExAll()
--------------
```

When you are creating data CDs MakeCD has to search the chosen directory. The AmigaOS has two functions for this: an old, highly compatible, but relatively slow function, and a new, quick function. The new function is called ExAll(). It is associated with several problems. If you want MakeCD to use the new function, activate this gadget.

MakeCD is aware of some, possibly all, of the problems associated with ExAll() and will try to use the older, slower function where applicable. This means that it is normally safe to use 'Permit ExAll()'.

1.46 MakeCD.guide/MISTM

```
                Test Mode
---------
```

If this is activated, MakeCD will run in test mode. This setting only relates to the tools menu functions. You can use the write window immediately before burning a CD-R to select whether to burn in the test mode or for real. More details relating to the test mode can be found under

```
                Test Mode
                .
```

1.47 MakeCD.guide/MISPR

```
Parallel Read/Write
-------------------

Here you can set whether MakeCD sends parallel read or write requests
to your source or target drive.

You can improve the performance if you activate this field, provided
that your SCSI configuration really does support parallel read/write
(i.e.  reselection is activated for the CD burner) or the data is being
read from another SCSI bus or from an IDE bus.

You should deactivate this field if reselection is deactivated for the
CD burner and you are reading data from the same bus which the CD
burner is attached to. This will marginally improve the performance.

In all other cases you would normally activate this field. There is one
notable exception: deactivate this field if you do not have to
deactivate reselection for your CD burner, but your device driver
has problems under extreme parallel access.
```

1.48 MakeCD.guide/MISPA

```
Pure Audio Data
---------------

There is no standard format for saving audio data (CDDA data). Some
programs store audio data in the Motorola format, others in the Intel
format.

You can use this field to set which format MakeCD uses for reading and
writing audio data.
```

1.49 MakeCD.guide/MISIO

```
IO Error
--------

This determines the procedure taken after a read or write error occurs.

Ignore
     The error is ignored -- MakeCD will continue as though nothing
     happened.

Pad with Null
     The missing data is padded with the null character -- MakeCD will
     continue as though nothing happened.

Stop
```

```
     Abort, but finish writing the buffer contents.

Delete File and Abort
     Abort immediately and delete the incomplete file (if possible).

Abort
     Abort immediately, but keep the incomplete file.

Ask
     Offer all the preceding options in a requester and let the user
     decide.
```

1.50 MakeCD.guide/MISOI

```
Ignore Overflow
---------------

Some CD-ROM drives or CD writers report errors if they deliver the data
faster than the computer can handle it. This is because the drives'
internal RAM gets filled causing them to interrupt reading.

An interruption may cause the drives to continue reading at the wrong
position which will result in noisy audio data.

Some drives even report errors although the delivered data is not
corrupt.  If this is the case, turn on 'Ignore Overflow'.

If your drive reports errors correctly, you should keep this option
turned off in order to be informed about such problems. In case your
drive reports errors and delivers corrupt data, we recommend to lower
the reading speed and to increase the buffer. If nothing works, try a
different drive.
```

1.51 MakeCD.guide/MISAL

```
Audio Length
------------

Select 'Block' if you are reading audio data exclusively from CD. If
you want to be able to use your own audio data samples in addition to
CD, select 'any'.

If you select 'any', MakeCD stops checking if the source really is CDDA
data (this is no longer technically possible). The only way to
automatically recognize CDDA data is to test if the data length is
divisible by 2352 (sampled data is usually not divisible by 2352).
```

1.52 MakeCD.guide/MISAS

```
Audio Start
-----------

For technical reasons, CD-ROM drives and CD burners do not have to
locate the exact start block. Some drives start transferring audio data
a fraction too late, missing the start of the track.

The number of blocks you enter here will be subtracted from the start of
the track to be read. In this way MakeCD will read the track earlier,
helping you to catch the start of the track.

Some drives (e.g. Yamaha CDR100/102) have a firmware bug that causes
them to start reading all audio tracks N (usually 32) blocks too late
if the first audio track didn't start at block 0 but at block N. The
drive will then fail to catch the first N (e.g. 32) blocks of each
track. A value of N blocks will cause MakeCD to start reading that
number earlier thus catching these blocks. Other CD burners may do
better with other values.

If you feel that some music is missing from the start of the track,
start off with a value of 0 and change this field correspondingly. 75
blocks = 1 second of music.

Please note: this setting modifies the track start in the track
selection window or when adding tracks. As such, it only affects tracks
which have not yet been added to the project.
```

1.53 MakeCD.guide/MISAP

```
                Audio Pause
-----------

It is not possible to find out the exact length of a track -- most
programs assume that a track ends where the next track begins.

This means that the pause between the current track and the next track
is usually read too.

You can use this field to set the pause length. MakeCD will remove the
corresponding number of blocks from the track.

CDs mastered in the TAO mode normally have a pause of 152 blocks between
the tracks, so try this value first. See
                Track-At-Once
                .

Please note: this setting modifies the track start in the track
selection window or when adding tracks. As such, it only affects tracks
which have not yet been added to the project.
```

1.54 MakeCD.guide/MIDMA

```
                Main Window Description
=======================
```

The main window contains a list of the tracks that you want to write, several settings for each of these tracks, and several gadgets used for starting the process.

You can use the gadgets to add or delete tracks from the track list, change the track sequence, or play the currently selected track (providing it is an audio track). Intermediate files (image files) can be set for each track.

There are a few properties that have to be set for every track in the track list.

1. Use the cycle gadget to select the type of track that you want to write (usually a data or an audio track).

2. Now select the source for this track. There are several options:

   File System
   : The data for the track will be read from a hard drive or another medium - an ISO 9660 image will be created so that the data on the CD can be read.

     Then, declare the ISO setting by clicking on the popup gadget.

   Track from CD
   : You can read the data for the new track from another CD. This can be any type of track. This option of MakeCD enables you to copy CDs.

     Choose the source track -- click on the popup gadget and select your track from the track entry window.

   Image File
   : With this setting, MakeCD reads the data from an image file created earlier on your hard drive. This could be an ISO image, audio data, etc.

     With this setting, choose the image file you want to burn on the CD -- click on the popup gadget. A file selection window appears. Select your file.

     After you have chosen the image file, MakeCD will inform you of the assumed or detected type of data within the image file. The options are:

     [AIFF]:
     : An AIFF file that will be converted automatically by MakeCD before being sent to the CD burner. Due to the quick conversion, a further image file is usually not required.

[Bad AIFF]:
An AIFF file that cannot be used with MakeCD.

[CDDA?]:
CDDA data cannot be identified with any certainty. For that reason, MakeCD can only assume that the data is of a CDDA type -- and thus the question mark. CDDA data may come in two different formats: 'MSF' respectively 'Motorola' and 'LSF' resp. 'Intel'. You yourself have to ensure that the AIFF data conforms to the format that you selected in the settings 'Pure Audio Data'. Otherwise, your audio CD-R will feature noisy scratches instead of music tracks.

[DATA?]:
Data tracks, too, cannot be identified with any certainty due to several approved standards. MakeCD can only assume the data type -- thus the question mark.

[???]:
If MakeCD is not able to identify the data at all, these question marks will be presented. Then, select another image file or correct the 'Track Type', if necessary.

Block Medium
This setting reads the data from the block medium declared in the MakeCD
Settings
This option is normally used if you already have an ↩ image on
this block medium and want to write this to the CD-R. You can find further details by the target description.

Please make sure that you have set the correct block medium in the settings window.

3. Now select the target. Again, you have several options:

Use Image File
The data is not sent directly to the CD burner. Instead, an image file is created. In turn, the image file sent to the CD burner.

Use this option if you have sufficient hard drive space and are not sure if the data source is quick enough.

Remember to declare the image file to be created. Old files with the same name will be overwritten if the length of the image file does not match the length of the data to be written. Decide when the image files are to be deleted.

Direct to CD Burner
The data will be sent directly to the CD burner. An intermediate file (image file) will not be created; a block medium will not be used.

In many cases, the data can be transferred directly to the CD

burner. You should burn in test mode first in case there are problems. If the test fails, try using an image file.

Use Block Medium
MakeCD can write data directly to a hard drive starting at the block you have set (usually block 0). This is extremely useful for data CDs if you want to test the ISO image before burning it, and if you don't want to use the 'cdromemu.device'. In addition, most CD manufacturers will accept this form as source.

This option uses the block medium as defined in the

Settings Window
. and will create the image on this medium.

Please note: this option can destroy the data on your hard drive. Only use this option if you know exactly what you are doing!

The main window has further gadgets:

Root Directory
You can set the directory used for all image files -- enter your chosen directory as the root directory.

This is particularly useful if you want to use your own directory for the image files of each CD. Specify this path before creating the track list - this makes it is easier to select the file names for the image files.

This option is particularly useful for CDs with numerous tracks, e.g. music CDs.

Start Block
Generally, the 'Start Block' can be left switched off. But if you want to make a multisession/multivolume CD using an ISO image, you must enter the correct start block. Usually, you can keep the 'Start Block' switched off. If necessary, MakeCD will request some information in order to calculate the start block prior to the creation of the image file.

The "Start Block" is the block on the CD-R which can be written next. For empty CDs, this value is 0. If there are already tracks on the CD, the value is positive. If you insert the CD-R in your burner, MakeCD will find this block for you when you select the popup gadget after you set the track type of the first track correctly. The type of the first track to be written (the first track of the track list) has to be set correctly in advance because the start block of the next track may vary depending upon the type of the first track.

It is only necessary to fill in the correct 'Start Block' if you want to make an image file for a CD-R that already contains data and if you neither have the CD-R nor a CD burner to read the CD-R handy. In both cases, you will have to know the correct value,

however. Furthermore, the value entered at 'Start Block' will only used if you select 'Write Image Files', unlike if 'Write Tracks' is called.

MakeCD can also find this block from a CD-ROM drive, provided that the session was fixed on the CD-R after the last track that was written -- otherwise your CD-ROM drive will return an incorrect value.

You can create a multivolume image without actually having the CD-R! -- all you need to know is the start block.

Please note that MakeCD automatically uses the correct value if the CD-R is available and if you call 'Write Tracks'. Your selected 'Start Block' will then be ignored.

If you call 'Write Image Files', the 'Start Block' you entered will be used or the user will be asked to specify the CD-R that the image file is supposed to be created for.

MakeCD will warn you if you try to write an image file with the wrong start block to the CD-R. This should prevent you ruining a disk with the wrong value.

Write Image Files...
This function attempts to create all the remaining image files. You must either enter the correct start block or deactivate 'Start Block' before using this command.

Write Tracks...
This function writes the image files and sends them (or the data from the source if you are not using image files) to the CD burner. Please make sure that your system is fast enough for this process, otherwise you risk producing faulty CD-Rs.

Play Audio...
This command plays all the audio tracks in the track list. You can use this to test the quality of the audio data before you burn it.

Click on 'Start' if the write window appears. MakeCD then starts to play the audio data.

You can adjust the lowpass filter and volume, skip within the current track and jump to any other track.

You can save the lowpass filter and volume values using the menu.

1.55 MakeCD.guide/MIIOP

ISO Options Description
==========

If you want to create your own data CD, create a data track and set

'File System' as the source for this track. Then, click on 'Settings'. A window will appear -- this section explains how to use this window.

The list in the window shows all the sources for the image. For multisession merging, these could be path names or tracks from the CD-R.

You can use the list's gadgets to add and delete entries. Each entry can be defined as a path from the hard drive or a track from the CD-R. Use the popup gadget to select either the path or the CD-R track.

The sequence of the entries in the list only matters if there are file name clashes. Should more than one file share the same name, the file which appears first in the source is added to the ISO image and all subsequent files which generate clashes are ignored.

If you are creating a multisession CD, you probably have at least one CD with at least one data track. Add the path(s) to be scanned to the list. Next, add the tracks which are to be added to the image. The first path will be added to the image -- all files from the following paths or tracks are only added if their names do not clash with the name of a file in the image.

Suppose you burn a data CD in four sessions and want all the data to be visible. Record only the last track that was burnt in the image before burning a new track. If you forget this to do this once (e.g. you remembered to record after track 3 but forgot after track 4), simply save both track 3 and track 4 next time round. Then, the track is written very quickly (this takes just a few seconds) and uses little storage space if you do not add data to it. Fixing the new session requires about 13.5MB (if this is the first session, otherwise 22.5MB).

One simple way to avoid name clashes is to store each path/track in its own directory: activate the tick for 'Image path' and enter the name for the new directory. The current objects will be copied to this directory. You can avoid name clashes in this way, creating a directory for each source.

Once you have selected the source to be copied to the ISO image, the next step is to set the ISO options.

First, enter the name for the data carrier. This is the name that will appear on the Workbench when the CD is inserted into the CD-ROM drive.

System ID, Author and Sales are not required -- you can usually leave these entries empty. We are unaware of any programs which use these strings or expect to find particular values there.

Copyright, Overview and Summary are not required -- you can leave these fields empty.

If you want your CD to boot on the CDTV/CD32, alter the CDTV/CD32 options: turn on the writing of CDTV preferences and use the correct trademark file - you can find the trademark files on the AMIGA Developer CD v1.1, directory: CD32/ISO9660Tools_V1.04/ISOCD. Use either CDTV.TM or CD32.TM. These files are notincluded with MakeCD -- this is due to copyright laws.

The other values do not need to be changed. The values are passed on to the Commodore file system but are not well documented. You may like to experiment with these values and gauge their effect on the CDTV/CD32.

Now you need to change the ISO/Rock Ridge options -- this seems to be the most difficult part for many users. If a Meeting Pearls CD runs well on your system, you can use similar master options from the menu. There are no differences in the master settings between Meeting Pearls II and III.

Next, check the following gadgets and change them if necessary.

Sort Sequence
Icons on CDs made using MakeCD (and most other CD recording softwares) load quite quickly. A CD-ROM drive takes about 0.1 s to access a file (a slow drive takes about 0.2 s). A directory containing 20 icons is usually displayed in less than 2 to 4 seconds, i.e. faster than you would expect given the access time. This is because MakeCD saves all '.info' files in the same area. This means that when the first '.info' file is accessed, the following '.info' files are usually copied into the cache of you CD burner/CD-ROM drive and can then be loaded more quickly.

This list defines which files are to be stored in the same area. Simply add the endings of the required files to this list. For example, if you want '.hmtl' to be found quickly, add '.hmtl' to the list.

'.info' is the preset.

ISO Level
ISO 9660 file names and directory names have a number of restrictions. Only upper case letters, digits and the underscore character '_' can be used. There must be exactly one full stop in file names and no full stops at all in directory names. File and directory names must not exceed 31 characters in length.

Some AMIGA CD-ROM file systems do not support Rock Ridge (e.g. Commodore CDFS, as included with OS 3.1) and do not work well with these restrictions. In view of this, you can ignore this standard by selecting 'ISO 9660 AMIGA'. CDs that have been created with these options will still work on most systems, though there can be problems under MS-DOS.

ISO 9660 Level 1 generates file names which are fully compatible with MS-DOS systems. In addition to the restrictions described above, these names are limited to the 8.3 format.

ISO 9660 Level 2 is not limited to the 8.3 format, but all the restrictions mentioned above apply.

We recommend that you use 'ISO 9660 AMIGA' for CDs that are definitely for AMIGA's only. If the CD is for MS-DOS systems too, use ISO 9660 Level 1 with Rock Ridge extensions -- bear in mind that AMIGA users will need to use a file system that supports Rock Ridge. See below.

Change .info Extension
: Workbench 1.3 only displays icons with the '.info' file extension - '.INFO' or '.info' file extensions will not be displayed. This option ensures that all '.info' files are lower case. This option is only necessary if you want the CD to be readable under Kickstart/Workbench 1.3 or on the CDTV.

Change ISO Names to Upper-Case
: Select this option if you don't want the file name restrictions of ISO 9660 but want to make life easier under MS-DOS. This option changes all ISO names into upper case. Other invalid characters, however, remain unchanged. i.e. a-z characters are converted into A-Z. Please note that some of the files may not be accessible under MS-DOS. Schatzruhe GmbH use this option for most of their CDs. If you also select Rock Ridge (like Schatzruhe GmbH), you will see complete Rock Ridge names that have not been changed. You will need a CD-ROM file system that supports Rock Ridge.

  CDs written using this option can be read problem-free on the AMIGA and read better under MS-DOS than an 'ISO 9660 AMIGA' CD written without this option. If Rock Ridge is selected, AMIGA users with a CD file system that supports Rock Ridge see the names unchanged. If Rock Ridge is not selected, or if your CD-ROM file system does not support Rock Ridge, you will primarily see upper-case characters.

Rock Ridge
: Rock Ridge extensions are written into the image when this option is selected. CDs with Rock Ridge extensions can be read on all file systems that support ISO 9660, hence are backwards compatible. If your file system supports Rock Ridge, you can benefit from a few additional features such as multi-user flags, AMIGA file attributes or unchanged file names (even if they were mastered using ISO Level 1 or 2).

  In general, we recommend this option.

  The current versions of AmiCDFS, AmiCDROM, CacheCDFS, BabelCDROMFS and AsimCDFS all support Rock Ridge.

  The CommodoreCDFS (included with OS 3.1) does not support Rock Ridge.

World Access
: If you select Rock Ridge, multi-user flags will be written to the image. This option gives all objects the same world access priority as the owner.

  This is useful if the CD is used with Unix machines.

Group Access
: If you select Rock Ridge, multi-user flags will be written to the image. This option gives all objects the same group access priority as the owner.

  This is useful if the CD is used with Unix machines.

Save AMIGA File Attributes
The AMIGA protection bits and the AMIGA file comments are recorded in the image if this option is selected.

Please note: you require a CD-ROM file system that supports AMIGA file attributes in order to see these attributes when using the CD.

The following CD-ROM file systems support these attributes: AmiCDFS 2.30 or better, AsimCDFS 3.7 and the latest version of CacheCDFS (from the IDEfix '97 package).

1.56 MakeCD.guide/MIISW

ISO Write Window Description
==========

In order to create an ISO 9660 image, MakeCD has to scan the source path to be added to the image before the ISO 9660 image is created. The ISO write window opens.

Towards the top of the window you can see how many files/directories have already been scanned. Towards the bottom of the window, you can see which file/directory is being scanned. The display update is slow -- about 1-5 times per second -- not every file will be displayed. The slow update saves valuable processor time.

Following scanning, the entire size of the ISO image is calculated and displayed. Then, MakeCD prepares the image and begins to write it. The number of files/directories written is shown as well as the percentage of total files that this represents.

You can cancel the entire operation at any point -- MakeCD will quit with a "user abort" error.

1.57 MakeCD.guide/MIWRW

ISO Write Window Description
==========

The write window opens when you create an ISO image, burn a track or play audio files.

The write window includes useful information about the buffer, the source and the target and lets you control the operation.

'Buffer Display' shows the size of MakeCD's internal buffer, as well the extent to which the buffer is filled with data. Avoid confusing the MakeCD buffer with the buffer built into your CD burner. The CD burner buffer is not shown in the write window. The MakeCD buffer could be empty even though the buffer in your CD burner is full!

You can change the size of the MakeCD buffer in the
Settings Window
.
MakeCD uses this value as a guide -- it may use a slightly smaller or larger buffer. The buffer could be much smaller than your setting if insufficient memory is available.

A large buffer helps reduce the chance of a buffer underrun when writing a CD-R -- a buffer underrun can ruin a CD-R. Please note that the buffer will be close to empty when you turn off 'Parallel Read/Write' or if you turn off reselection for the CD burner. This makes burning a CD-R more risky. Some CD burners do not correctly implement CD burner reselection. In this case, you must turn off reselection, otherwise the SCSI bus hangs.

A smaller buffer can be used for playing audio CDs. Avoid too small a value here, since many drives corrupt audio data when there is a buffer underrun, i.e. when MakeCD does not fetch audio data from the drive, because the MakeCD buffer is full.

The MakeCD buffer will become full if the drive transfers the data faster than the buffer sends the data to the loudspeakers (or to hard drive or to the CD burner) and your drive has to wait before it can transfer more audio data. This wait can cause noise with some drives -- if the audio output is noisy, check that the MakeCD buffer is large enough and/or the drive is reading data at a slow enough speed as to avoid buffer underruns.

The buffer does not have to be large if you are creating just an ISO image on your hard drive. Also, buffer overruns and underruns are not critical.

The 'Source Display' shows how many files have been transferred from the source, the source of the files, and the current transfer speed. The transfer rate shown may be higher than is possible long-term -- even higher than the theoretical limit, especially if you are reading from your CD-ROM drive. This can be the case if the CD-ROM drive fills its internal buffer while the CD burner is writing. Should MakeCD request this data from the CD-ROM drive, it is transferred very quickly, i.e. directly from CD-ROM buffer. MakeCD cannot tell if the CD-ROM drive is reading the data from the CD or directly from the CD-ROM internal buffer. MakeCD merely shows you how quickly the data was transferred by the CD-ROM drive. Do not be surprised, therefore, if the transfer rate is higher than the actual speed of your CD-ROM drive!

The 'Target Display' has similar information for your target: where the data is being sent, how much data has already been written, and the transfer speed.

In addition, the window shows you the amount of data to be written, as well as the time (in minutes:seconds) consumed for writing. A display lists further information.

You can change the 'Write Mode' and the automatic 'Fixing' for your CD-R before starting the writing process.

```
Test Mode On
     The CD-R will be written in test mode. No permanent changes will
     be made to the CD-R.

Test Mode Off
     The CD-R will really be written. All changes will be permanent.

Write After Test
     If the test run is successful, the CD-R is written -- no further
     intervention is required. You can start the process and leave the
     room: if the test run was successful, the CD-R should be burnt by
     the time you return.

The CD-R can be fixed automatically if there were no errors in writing
the tracks. Set 'Fix' accordingly. Please see
                Target CD-R Window
                 and

                Fix Session Or CD-R
                .

No
     No automatic fixation.

Session
     The session is fixed automatically after a successful write
     process.

CD-R
     The CD-R is fixed automatically after a successful write process.

You can use the gadgets for this window to control the playing of audio
data. Please note: there is a slight delay with most of these gadgets.

No Lowpass Filter
     Turn off the Lowpass Filter.

Volume
     Controls the music output volume. Values above 100% will
     over-modulate the music.

Current Track
     When you are playing all the tracks in the track list, use these
     gadgets to skip between the tracks.

Position with 'Target'
     You can see the play-progress of the current track in 'Target'. You
     can change this state.

The state of all the gadgets can be saved via the menu.
```

1.58 MakeCD.guide/MITGW

Target CD-R Window Description

The main function of the target CD-R window is to show which tracks and sessions have been written to the CD/CD-R in the CD burner. In addition, you can fix the last session or the entire CD-R, as well as repair damaged CD-Rs.

You can access the target CD-R window via the menu. Many CD burners will also show tracks that have been burnt in the test mode. If you want to see the tracks that really have been written to the CD, click on 'Update.'

'Contents' shows all the tracks contained on the CD (or if applicable: only those burnt in the test mode).

'Sessions' shows which tracks belong to which sessions, provided that your drive can supply this data. See
Tracks & Sessions
.

The target CD-R window provides additional details.

Medium Type
: The medium type is displayed here provided your CD burner can supply this information.

Storage Used
: The amount of data (in minutes) saved on the CD/CD-R in the form of tracks is displayed. Two values are given. The first is the total of the tracks' length. This amount does not include the storage used for pauses between the tracks or the sessions' borders, but just the actual user's data. The second value displays the whole amount of storage used including the pauses and the amount required for sessions.

Storage Free
: 'Storage Free' shows the amount of free storage on the CD-R. You can write to the CD-R until 0 bytes are free. There is still some storage space remaining when you reach 0 bytes, but this is reserved for the lead-out.

  Adding the amounts for storage used and free can result in an amount that differs around 2 to 3 seconds from the real one of the CD-R. This is normal and can be ignored.

CD-R Status
: This field shows the status of the CD-R (OK or not OK), provided your drive can supply this information.

You can use the following buttons to repair or fix the CD, or to fix one session only:

Fix CD-R
: Fixes the entire CD-R. You cannot add further tracks or sessions once the CD-R has been fixed. The CD-R can only be fixed if there

is at least one track in the session that was last opened. See

Fix Session or CD-R
.

Fix Session
Fixes the session only. You can write further tracks to the next session. You can only fix the CD-R if you write at least one more track afterwards. See
Fix Session or CD-R
.

Repair CD-R
You can use this if your CD burner supports a repair function (e.g. Phillips and Sony CD burners). Sony has a better repair function than Phillips and can often restore damaged CDs to a CD-R -- allowing you to add new tracks.

Old tracks on the CD-R are usually at least partly readable following repair. Sometimes, though, the CD-R too badly damaged and recovery is not possible.

Fast Format
You can only use this option if you have a CD-RW drive and an inserted CD-RW medium. MakeCD will erase the directory structure leaving the actual data unchanged. Thus, recovering the data still remains possible with appropriate software. If you wish to erase sensible data, use the 'Format Completely' option instead.

Format Completely
You can only use this option if you have a CD-RW drive and an inserted CD-RW medium. MakeCD will erase all data. This may take considerable time. If you intend to empty the CD-RW in order to write to it afterwards, use the 'Fast Format' option instead.

Once you have looked through the details for your target CD-R -- perhaps you have just fixed or repaired it, leave the window by means of the close gadget.

1.59 MakeCD.guide/MIMEN

Main Menu Description
==========

The main menu has several menu points relating to project management and your drives and CD-Rs.

Project
Load, Save, Quit, ...

Edit

```
                Edit Track List

          Tools
                Target CD-R, fix, eject, ...

          Options
              Settings, Quickhelp, ...
```

1.60 MakeCD.guide/MIMPR

```
The Project Menu
----------------

The project menu includes functions relating to project management. You
can use the project menu to load and save the settings made in the track
editor.

Open...
.......

This menu point opens a file selection window so that you can load a
previously saved MakeCD project. Select your project and click on 'OK'
-- the saved track settings will appear in the track editor.

Add...
......

This function is the same as 'Open...', with the exception that any
tracks already in the track editor are not removed but are added to the
end of the loaded project. This enables you to merge two projects.

Save
....

'Save' saves the current project. If the project has not yet been
saved, a file selection window opens. Otherwise, the project is saved
under the old name.

If you omit the file name extension '.mcd', MakeCD will add this for
you.

Save As...
..........

This menu point saves the current project. You can choose the project
name before the project is saved.

If you omit the file name extension '.mcd', MakeCD will add this for
you.

Registration...
...............
```

If you did not yet save your registration, you can do this by selecting this menu item. In case your registration is already saved, this menu item is disabled.

About...
.....

A window opens containing information about MakeCD. The version number can be found here, as well as the person who has registered MakeCD.

Quit MakeCD
.....

You can quit MakeCD using this menu point or the close gadget. No requester will seek confirmation!

1.61 MakeCD.guide/MIMED

The Edit Menu

The edit menu has several useful functions for changing the track list.

Add Entire CD
.....

This reads the contents directory of the CD in your read device. The contents directory is then added to the track list and 'Track Type' is changed correspondingly.

This function is very useful when copying CDs -- it works just like a copy function if the track list is empty before the operation.

If you set 152 for 'Audio Pause' and 0 for 'Audio Start', MakeCD usually generates an almost identical copy of the source CD. You will be able to make a 100% identical copy once MakeCD is able to use Disc-At-Once.

Set 'Target' to 'Use Image File' before you select this menu point if you want to create image files for most of the tracks before they are burnt. This will become the default value for all subsequent tracks that are added. Alternatively, set 'Direct to CD Burner' if you are generally not using an image file.

Once you have taken care of your modifications to the track list, start the copy process using 'Write Tracks...'.

Add Image File(s)
.....

Unlike 'Add Entire CD', this function lets you choose several image files to add to the track list.

Please note: it is not possible for MakeCD to recognize the 'Track

Type' for the images. You may need to alter the track types later on.

This function is useful, for example, if have several pieces of music on
your hard drive. You could use the MultiSelect in the ASL file selection
window to select all the music files in one go and add them to the track
list.

Delete
......

This menu point removes all the entries from the track list. No
requester will seek confirmation!

1.62 MakeCD.guide/MIMTO

                The Tools Menu

This contains useful tools -- mainly relating to the target CD-R.

Target-CD-R ...
....

This menu point opens the
                Target CD-R Window
                 . This shows the contents
of the target CD-R and allows you to edit the CD-R.

Fix CD-R
....

You can fix the CD-R directly in the
                Target CD-R Window
                 , or by calling
this menu point. See
                Fix Session or CD-R
                .

Fix Session
....

You can fix the CD-R directly in the target CD-R window

                Target CD-R Window
                 , or by calling this menu point. See

                Fix Session or CD-R
                .

Repair CD-R
....

You can repair the session directly in the
                Target CD-R Window

```
                , or use
this menu point.

Fast Format
...........

You can (quickly) format a CD-RW medium directly in the

               Target CD-R Window
                , or by calling this menu point.

Format Completely
.................

You can (completely) format a CD-RW medium directly in the

               Target CD-R Window
                , or select this menu point.

Eject
.....

The eject menu point has two submenus: 'Source' and 'Target'.  These
submenus eject a CD disc from the read drive or the write drive,
depending on which one you select.
```

1.63 MakeCD.guide/MIMOP

```
               The Options Menu
----------------

The options menu is useful to choose some important settings.

Settings ...
............

This menu point opens the
               Settings Window
               .  This window is used for
configuring MakeCD for your system.

Save Current Gadget State
.........................

This menu point saves the status of some of the main window gadgets.
This status will be used when next launching MakeCD.

Quickhelp
.........

MakeCD uses bubble help to provide information about the user
interface. The bubble help can be turned on or off, and the current
state can be saved.
```

1.64 MakeCD.guide/MBEGN

```
                Instructions for Novices
************************

This chapter is intended for AMIGA beginners and newcomers to
MakeCD. Even advanced users may find useful information here.



                MakeCD
                     How To Use MakeCD

                CD-Copy
                    Copying CDs

                Data CD
                    Making A Data CD

                Audio CD
                   Making An Audio CD
```

1.65 MakeCD.guide/MBMCD

```
How To Use MakeCD
=================

MakeCD centres around a track editor. The tracks are always arranged as
a track list, whether you are copying a CD or organizing the tracks
yourself.

Define which type of track you want to write (this is usually a data or
an audio track), the source of the data that is to be burned (i.e. where
the data is coming from), and if you want to write the data to an image
file first.

When copying CDs, MakeCD reads the tracks from the souce CD and passes
them to the track editor in the correct form. When creating your own
CDs, take care to arrange the tracks correctly.

Once you have finished arranging the tracks, click on "Write Image
Files" to create the image files only, or "Write Tracks" to burn all the
tracks. Image files will be created in advance.
```

1.66 MakeCD.guide/MBCOP

```
                Copying CDs
===========
```

As mentioned above, MakeCD can be used to copy CDs. To create an almost identical copy, proceed as described below:

1. Set "Audio Start" to 0 in the Settings Window.

2. Set "Audio Pause" to 152 in the Settings Window.

3. Select the appropriate Source ("Read") and Target ("Write") devices within the Settings Window.

4. Alter the remaining settings as described in See Settings .

5. Choose whether to use intermediate files or not within the Target section of the Main Window. This setting will be used for all tracks to come.

6. Select "Add Entire CD" from the menu within the Main Window. MakeCD will then create a tracklist.

7. You may check the settings of all tracks in the tracklist.

8. Select "Write Tracks..." and follow the instructions. Choose the desired mode of fixation. To create an almost identical copy, select "Fix CD-R". The CD-R will then be burnt.

That's it. You will have an almost identical copy once the CD-R is finished. However, truly identical copies require Disc-At-Once mode.

1.67 MakeCD.guide/MBDAT

```
Creating A Data CD
==================
```

The most common operation when making data CDs is to copy a partition or a directory to a CD-R. This chapter explains how to do this.

A simple data CD consists of one data track. Once you have loaded MakeCD, add a data track to the track list by clicking on 'New'. A single track should appear in the track list.

Next, check that the track type and the source for your track have been correctly set. Use the mouse to select the new track in the track list (this track should be highlighted anyway). Ensure that the cycle gadget 'Track Type' is set to 'Data'.

For our example we shall burn a partition or an entire directory. We need to select the type for the source to 'File System' - set the corresponding cycle gadget to 'File System'.

MakeCD cannot tell which data you want to burn. So, click on the popup gadget for the source. A window opens.

This window contains a list. All the source paths need to be entered in this list. Click on 'New' and make sure that the source type cycle gadget is set to 'File System'. After all, you want to read from a file system and not from a track that already exists on the CD-R. The last option is only applicable for multisession CDs.

We have now selected our source. The next step is to choose how to master the CD. Click on 'ISO/Rock Ridge...'.

Set the following values so that your data CD has maximum compatibility on as many AMIGAs possible:

1. Rock Ridge: On
2. World Access: On
3. Group Access: On
4. AMIGA File Attributes: On
5. ISO 9660 AMIGA
6. AMIGA File Attributes: On
7. Change ISO Names To Upper-Case: Off

Now, enter '.info' in the 'Sort Sequence' list. This will make the CD feel quick under Workbench.

Don't change any of the 'CDTV/CD32' options - unless you want the CD to boot from a CDTV/CD32.

Leave the window using 'Save' or 'Use'.

Our data CD still has no name. Set the 'Volume Name' - this is the name that will appear on the Workbench. Enter your name for 'Author'. The remaining fields can be left blank.

Leave the window using 'OK'.

Now decide if you want to create an image file first or have the data sent directly to the CD burner. Set the cycle gadget for 'Target' correspondingly. If you want to create an image file, enter the file name in the corresponding text gadget. Sending the data directly to the CD burner is a more hazardous process, since the performance requirements are greater and a buffer underrun is more likely. You should always run in the test mode first to ensure that the system is running smoothly. You may need to increase the buffer size in the

settings window and/or reduce the burn speed.

We're almost at the finishing post! You now need to click on 'Write Tracks...'. All image files will be generated and burnt to the CD. Follow the on-screen instructions.

The write window will appear. Use the window to burn the CD-R in the test mode or for real. We recommend that you try the test mode first. In test mode, the same process is used as with real burning, with the exception that the laser beam of the burner is not turned on i.e. no permanent changes are made to the CD-R.

In addition, you can set if and when the CD-R should be fixed. More about this later on. If you are not sure if you want the CD-R to be fixed, turn off the automatic fixing for now.

Next, click on 'Start'. This starts the process.

The process will take some time. We recommend that you leave your AMIGA to work uninterrupted. It is possible to have other programs running during the process, for example, a robust word processor is unlikely to cause problems. However, you must avoid all programs that use the CPU for a long period at a time at a high priority (and of course any programs that have a habit of crashing unexpectedly!) - if MakeCD is ousted from the processor for more than a few seconds (typically 0.5 - 15 seconds, depending on the size of the burner's internal buffer and the writing speed), your CD burner may experience a buffer underrun. A buffer underrun can ruin the entire CD-R, making it unusable. At the very least, the current track is likely to be lost.

NB: reports suggest that some graphics cards use up so much processor time at such a high priority when changing screens that MakeCD can be locked out from the processor long enough to cause buffer underruns. This is not a problem on all systems - try this out for yourself in the test mode i.e. keep changing the screen while in test mode and see if there are problems.

Once MakeCD has burnt the track, either the CD-R is fixed, the session is fixed, or nothing is fixed - this will depend on the setting you chose. The MakeCD status display will inform you of any fixing that takes place. You can now burn another CD-R (which you don't want to do) or click on 'Abort'. Click on 'Abort'.

If the CD-R or the session was fixed, take out the CD-R and try reading it from your CD-ROM drive. You can add data later if you fixed the session only.

If there was no fixing, use the menu to select 'Fix Session' (select this if you want to add more data to the CD-R later on) or 'Fix CD-R' (select this if you are sure that no more data is to be added to the CD-R).

We've finished creating our data CD! Try reading the CD-R from a CD-ROM drive!

It may be possible, depending on your burner, to read the CD without actually fixing anything. We recommend that you try this. The advantage

is that you save a lot of space if you do not fix the CD-R.

NB: You can create the image files without burning a CD by clicking on
'Write Image Files...' instead of 'Write Tracks...'.

However, image files containing data from your hard disk (ISO images)
are created specifically for the CD-R that is to be written. There will
be no problems with empty CD-Rs. If the CD-R already incorporates data,
MakeCD has to access the CD-R in order to create the image file
accordingly. To be more precise: MakeCD has to determine the block of
the CD-R at which the ISO image file will later be added. This would be
block 0 with empty CD-Rs - with partially filled CD-Rs, MakeCD has to
find that block first. A window will then inform you of these conditions
and give you the possibility to make an appropriate selection.

1.68 MakeCD.guide/MBAIO

Creating An Audio CD
====================

An audio CD usually has several tracks. There is normally one piece of
music per track. Each track has a number by which it can be referenced -
this is the track number displayed by CD players.

Arrange the music pieces in the track list. The first entry in the list
corresponds to the first piece of music, the second entry corresponds to
the second piece of music, etc.

You can copy music pieces directly from other CDs or load them from
files. Files must be in the CDDA format (this is the raw format as
read from CDs) or in the 'AIFF' format. MakeCD will recognize the format
and convert it during burning into data which the CD burner recongnizes.

You can use MakeCD to make a CD which takes its tracks from a number of
different music CDs as well as data read from a file. MakeCD will
prompt you to insert the CDs as they are required during the copy
process. You can also make copies, even if you have just the one drive.

The following sections help you create your first music CD.

Start by setting the 'Track Type' cycle gadget to 'Audio(normal)' and
the 'Type' for 'Source' to 'Image File' (if you want to read most of
the data from files) or to 'Track from CD' (if you want to read most of
the data from another CD). This is not essential, but saves you work
later on. The gadget settings can be different for each track in the
track list. However, the settings from the previous entry are copied
for each new entry to the track list.

If most of your tracks will use image files, set the cycle gadget
'Target' to 'Use Image File', otherwise, set it to 'Direct to CD
Burner'. This setting can be changed later on for each track, but why
not make life easier and set the default to the most frequent setting?
We recommend that you use image files to begin with if you have
sufficient hard drive space.

'Delete File' can also be set separately for each track. You can set when the temporary image files should be automatically deleted. If you set 'Never', you will have to delete the image files yourself.

Save these settings using 'Save Current Gadget State' from the menu - the defaults will help save time later on.

We have taken care of the settings. We want to create a CD with the following structure:

1. Music piece from CD A (piece 3), with image file
2. Music piece from CD B (piece 2), without image file
3. Music piece from an available AIFF file
4. Music piece from an available CDDA file
5. Music piece from CD C (piece 5), without image file

To begin with, let's add a track to the track list for each music piece. We will also adjust the settings for each track.

Track 1 (CD A, piece 3, with image file)

Click on 'New' to create the first track. Next, set the 'Type' for 'Source' to 'Track from CD'. Now, insert a music CD in your read drive and click on the 'Source' popup gadget.

A track selection window opens. Click on 'Update' to read the contents of the CD. We want to record the third music piece to our CD, so click on the third entry in the track selection window list. If you know the song title, type it (or an abbreviation) into 'Name' - please avoid using the space character. Leave the track selection window by clicking on 'OK'. The 'Track Type' is automatically set to the correct value when you leave the track selection window, so you needn't change 'Track Type'.

We want to create an image file for the first track, so make sure that 'Target' is set to 'Use Image File'. Then, enter a name for the track in 'Image File' - this name is used when the track is saved to the hard drive. MakeCD may suggest a name for you - by all means change this to a more appropriate entry.

You must enter an appropriate path for the image file. Image files use considerable storage space -- about 173 KB per second for audio data. Make sure that the partition you select has sufficient free space. If you want to save all image files to the same directory, you can enter the directory in 'Root Directory'. This directory will be used for all objects with a relative path. If you leave 'Root Directory' empty, use absolute paths only (i.e. names containing a colon).

We have finished defining the first track. Now to define the second track...

Track 2 (CD B, Piece 2, no image file)

Click on ‘New’ to create the next track. Set the ‘Type’ for ‘Source’ to ‘Track from CD’. Insert another audio CD, and click on the gadget again. The track selection window opens.

‘Update’ the track selection window, select track 2, and enter a name in ‘Name’. Leave the window using ‘OK’. ‘Track Type’ is automatically set to the correct value when you leave the track selection window.

Set ‘Target’ to ‘Direct to CD Burner’.

NB: select ‘Use Image File’ as described above if you have selected the same device for reading and writing in the settings window. MakeCD can only copy tracks directly if the source and the target drives are different!

We have finished defining the second track!

Track 3 (AIFF File)

Please skip this part if you do not have an AIFF file.

Otherwise, click on ‘New’ to create a new track. Set ‘Track Type’ to ‘Audio (normal)’. Set ‘Source’ to select ‘Image File’. This means that MakeCD is to read the data from an image file.

Click on the ‘Source’ popup gadget. The track selection window does not open this time. Instead, a file selection window appears - MakeCD realises you want to read an existing image file and not a track.

Select the AIFF file and close the file selection window using ‘OK’.

MakeCD can convert AIFF files into data that your CD burner understands very quickly, so enter the target as ‘Direct to CD Burner’. You could, theoretically, create an image file - this would contain the data in the same form that is eventually sent to the CD burner. However, this is usually unnecessary.

We’ve now finished setting up the AIFF file!

Track 4 (CDDA Data)

Please skip this part if you do not have a CDDA file.

Otherwise, proceed as with track 3, but choose a CDDA file instead of an AIFF file. MakeCD automatically recognizes the CDDA file and sends the data to the CD burner. MakeCD will change the byte sequence if necessary.

Please note: CDDA data must be in the exact byte sequence selected in the settings window - otherwise you will end up with a terrible, ringing data noise. We will check this before we start burning.

There is no point in creating an image file for CDDA data, so select ‘Direct to CD Burner’.

Track 5 (CD C, Piece 5, no image file)

Finally, we want to add another track from a third CD. This should be the fifth track.

You should now be able create this track without additional help. This time we do not want to create an image file.

The most difficult part is over! We are going to create image files in the following section. We will then be able to listen to the results, and finally, we can burn the CD!

Click on 'Write Image Files...' to create the image files. Follow the on-screen instructions.

Once the image files are written, click on 'Play Audio...'. A window containing a few gadgets opens. Click on 'Start'. You should soon be able to hear the data using your AMIGA loudspeakers. You can skip within the current track or between the tracks, alter the volume and lowpass filter as required.

Close the window once you have finished checking the tracks. We are now ready to write the tracks. Click on 'Write Tracks...'.

The write window opens. Use 'Write Mode' to burn in the test mode (no permanent changes will be made to the CD-R) or to burn without the test mode (the CD will be written for real!). You can also select to run the test mode first and then burn if no problems are encountered.

You must now, choose if, and how, the tracks are fixed following a successful write process.

You cannot add further audio tracks if you fix the session, only data tracks. The written tracks can be read by a CD player immediately afterwards.

You cannot add further tracks if you fix the CD-R. The written tracks can be read by a CD player immediately afterwards.

You can add more audio tracks if you do not fix the session or the CD-R. However, the written tracks can only be read by your CD burner.

After making your choice, click on 'Start'. Then, avoid using your Amiga in such a way that could cause a crash or lead to a buffer underrun - avoid using "greedy" applications (those which use the processor for a long time at a high priority). A buffer underrun ruins the current track and can even destroy the entire CD-R.

Please read the following sections for trouble-shooting.

Buffer Overrun/Underrun

It is possible to copy audio tracks directly: the source drive and the target drive must run at exactly the same speed. You can set the read speed separately for audio tracks, but some CD-ROM drivers ignore this value. If the read speed cannot be set, make sure you set the target drive to the same speed as the source drive. Many CD-ROM drives transfer CDDA at single speed only.

```
     The direct copying of audio tracks is a time-critical operation.
     This is because the source drive cannot pause once it has started
     to transfer audio data. We strongly recommend that you try the
     test mode first. In case of doubt, we recommend that you use image
     files.

Track M requires "Audio (normal)" with Block Size 2352
     This message usually appears if you try to read CDDA data.
     MakeCD can only recognize if the data is CDDA in the following
     way: MakeCD checks to see if the data has a recognized format.  If
     the format is not recognized, MakeCD checks if the file length is
     divisible by 2352 - all audio data from CD is divisible by 2352.
     If you recorded the data yourself, the file is unlikely to be
     divisible by 2352 and you need to set the 'Audio Length' from
     'Block' to 'any'. The disadvantage: it is then possible to select
     any file, i.e. you could select a file which is totally
     unrelated to CDDA!
```

1.69 MakeCD.guide/MFAQS

```
                Frequently Asked Questions
**************************

Please carefully read through the FAQ before attempting to contact the
authors for support - you may find the answer in the FAQ.



                Registration
                      Questions about registration

                Support
                           Questions regarding support/registration

                Burner Problems
                   Problems with specific CD-burners

                SCSI Problems
                     SCSI problems, hanging SCSI bus

                Audio CDs
                         Questions about audio CDs

                Data CDs
                          Questions about data CDs

                CD Back-up Copies
                 Questions about copying CDs

                Miscellaneous
                     Miscellaneous questions about burning CDs

                GUI
```

Questions concerning the GUI

Settings
Questions about the settings

1.70 MakeCD.guide/FREGI

```
Questions regarding registration
================================

[Sorry, parts of this section are still available in German only.]

Frage (Registration with email):
     Please send me my registration number via email.

Antwort:
     Sorry, we can't do this for the following reasons:

       1. Katrin Schmidt hat keinen Internet-Anschluß.

       2. Nachdem im Internet sogar Beta-Versionen "verloren" gehen,
          die dann -- ohne Anleitung, Bezugsquellen usw. -- in
          irgendwelchen Cracker/Raubkopierer-Boards landen, haben wir
          keine Lust, ein unnötiges Risiko einzugehen, indem wir die
          Registriernummern per EMail verschicken.  Wir werden daher in
          naher Zukunft keine Anstrengungen unternehmen, um
          Bestellungen per EMail zu ermöglichen. Nur so können wir
          sicherstellen, von jeder registrierten Person auch die
          wirkliche Adresse zu haben, so daß eine eventuelle zivil-
          oder strafrechtliche Verfolgung ermöglicht wird. Auf diese
          Art erschweren wir den Raubkopierern die Arbeit, was
          sicherlich im Interesse unserer ehrlichen Kunden ist.


     Im Normalfall (Urlaubszeiten mal ausgenommen) bearbeitet Katrin
     Schmidt die Registrierungen sehr zügig und ein Programm zum
     Erstellen von CDs ist ja auch keine Anschaffung, die man unbedingt
     von heute auf morgen benötigt -- in der Regel plant man so etwas
     schließlich längerfristig.

Question:
     I'ld like to pay with my VISA card (or any other credit card). Do
     you accept such cards?

Answer:
     Unfortunately, VISA (and other credit card institutes) has quite
     strong conditions. If we accepted VISA cards, we would need a lot
     of VISA registrations. We are far from that. So, payment with VISA
     is not possibly, sorry.

     However, MakeCD is also being distributed by some companies.
     Maybe one of these companies accepts credit cards.
```

Question:
I want to get registered by transferring the money on a bank account. Please tell me an account number.

Answer:
We did not include our bank account in these documents on intention. Often, name and address do not appear properly on our bank statements, so we can't send you the registration. Furthermore it will need more time to register you, as we don't get our bank statements very often and since we would have to transfer your data to Katrin Schmidt, who goes ahead with your registration. If you really don't see any other possibility, you can write us an email about that, but other possibilities are really preferred!

Question:
I don't live in Germany, but I want to order MakeCD anyway. How can I transfer the money to Germany?

Answer:
There are several possibilities:

Euro cheque in DM
That's most likely the most comfortable method for both of us. But please make sure you write an DM amount on the cheque and not an amount of your national currency. We can only cash euro cheques without additional fees if they are in DM. If they are in a different currency they cost us a lot of fees.

Cheque from German bank
Ask your bank if they have a partner bank in Germany. In this case, your bank can ask that partner bank in Germany to write a cheque in DM. If the cheque is from a German bank and written in DM, we don't have to pay additional fees for it. In your own interrest, ask your bank which fees you will have to pay for that!

Postal money order (German or international)
Go to your post office and ask them to send us the money in DM. That's a safe method. In parallel, you should send your registration form to us, but in case the post looses your registration form, make sure to note your whole address and the use on the postal money order. Then we can send you MakeCD at once even in case your letter gets lost.

If you are sending your postal money order from outside Germany, please choose an international postal money order with Germany as destination country. That's how Michael Habermann <drmike@peabody.jhu.edu> transferred his money from the USA. He writes:

> I went to the Post Office. I fill out a form with my name and yours, enclose a money order for $XX, but there are additional fees of about $7.50 for processing the transaction. The form and the money order get sent to International Money Orders in St. Louis, Missouri and they convert my USA money order into a German money

order which you can cash at any bank. They mail it directly to you, and they say it takes about 4-6 weeks.

You are right, apparently not too many people use this service, even the Postmaster told me that, and the person at the desk gave me the wrong information: He said that in a few weeks International Money Orders would send ME the converted money order that I would then send to you! Reading the information on the form I had to correct the postal worker on this. So it is not an everyday transaction.

Not all USA post offices sell International money orders, although I think all of them sell regular USA money orders. You might inform your other customers of the procedure I followed.

Cash
Of course, that's your own risk. Just go to your bank and get some German bank notes. Some persons then send the money in registered letters, but this also can't guarantee 100 % safety. However, usually the money reaches us. However, once we got a registered letter from Italy that did not contain the cash anymore. We don't know what happened here. We could not say if the letter has been opened or not (it was an air bag envelope) Maybe somebody stole the money out of the envelope.

Cheque from your bank
Cheques from outside Germany, which are none of those as described above, cost us -- depending -- about 20 DM each to cash. This amount of money is taken by our bank from the amount of money which you have written on the cheque. Therefore, you have to add about 20 DM to your cheque, if you want to use this method.

Question:
Why do I have to send the registration fee to Katrin and not to you, the authors?

Answer:
We are busy with writing MakeCD and if we made the registrations ourselves, it would take much more time than when Katrin's does this job. She's Angela's little sister and happy to earn some pocket money with this job. She especially enjoys nice persons at the phone and those letters which contain some nice words. ;-) Please note, that she can not answer technical questions. Please contact the authors directly, if you have such questions.

1.71 MakeCD.guide/FSUPT

Questions regarding support/registration
==========

Question (A question ...):
I have a question for you...

Answer:
Sure, but please make sure you have the following details:

Serial number
The serial number can be found in the 'About' window. This is not the number that you type in for registration! We reserve the right to help registered customers only.

Version number
You can also find the version number of MakeCD in the 'About' window.

Hardware configuration
This includes in particular the exact version numbers for your SCSI host adapter and CD burner.

Software configuration
This includes all the programs you have stated before encountering a problem with MakeCD, as well as programs in 'SYS:WBStartup' and 'S:User-Startup'.

Question (Hi authors, I'm stuck):
I purchased MakeCD from company XYZ and have the following problem: ...

Answer:
Please direct your question to XYZ or to the support address under

Support
. Please do not try to contact the authors of MakeCD directly, since this takes up time that could otherwise be spent improving MakeCD.

Question (Registration number cannot be saved):
I have typed in my registration number and address and saved. But when I next run MakeCD, I'm asked for the registration number again. Why?

Answer:
You are probably trying to register MakeCD on a partition with AFS (AMIGA File Safe) and are using a version of AFS that is older than 16.16. Update the AFS and the registration should work.

Question (Mailing lists):
Is there a mailing list for MakeCD?

Answer:
Yes. You can read more about this under
Mailing lists
.

Question (High serial number):
Wow! I have just registered and noticed how high the serial number

is. You have a lot of registered users!

Answer:
Appearances can be deceptive. We don't want our rivals to know how many (or how few) registered users we have, so the registration number is designed to hide this.

Question (Latest version of MakeCD):
I am a registered user of MakeCD and would like the latest version. Where can I get it from?

Answer:
If you have Internet access, simply visit our home page: 'http://makecd.core.de/'.

If you do not have Internet access, please contact the company that supplied you with MakeCD.

If you registered MakeCD directly from the authors, you can use the registration form to order a free demo version (you pay the postage and packaging only - 5 DM within Europe, 10 DM outside Europe). This offer is limited to one floppy per letter. Enter your registration number in this demo version to turn it into a new, registered version.

If you are not telling us which version you are actualy using, you will get the actual version. If you tell us which version you have, we will make sure not to send you the same version again.

You can save yourself time by paying for updates in advance. For example, if you would like to be sent the next three updates, please send us three times the postage and packaging fee (in this case 15 DM within Europe, 30 DM outside Europe) with a covering letter stating that you would like to be sent the next three updates. Please don't take this to excesses - there may not be as many updates as you pay for!

Incidentally, you do not have to be registered to order the demo version. The offer is open to all unregistered users too, who perhaps are using old versions of MakeCD and are interested to see what the latest version offers.

1.72 MakeCD.guide/FWRTP

Problems with specific CD-burners
==========

Question (Philips CDD 2600 reads incorrect data):
I have a Philips CDD 2600 and when reading audio CDs with this burner many errors occur -- especially when I try to read the outer regions of a music CD. Has this anything to do with the firmware version? I am still using the original firmware version 1.07.

Answer:
This is the official response from Philips:

> Tests have shown that the CDD2600 is not 100% reliable when reading audio CDs or packet written CDs at 6x speed. This problem is caused by the hardware and can *not* be solved via a firmware upgrade.
>
> You can get round the problem by reducing the speed for audio CDs in the settings to single or double speed.

With MakeCD you are able to get round this problem be setting the speed for audio CDs down to single or double speed in its preferences.

Question (Burner does not read short data tracks):
My HP_Burner (presumably a Philips) will not read pressed CDs with just one track (a short data track).

Answer:
This is the official response from HP:

> HP is aware of an issue reading certain pressed CD-ROM disks with a single track. The most important factor relating to this problem is the data size of the disk. Disks with more than 27MB are likely not to have this problem. The less data on the disc, the bigger the chance the CD cannot be read.
>
> Only a very small percentage of CD-ROM disks fall in this category. However there are two CD-R specific applications which may be affected:
>
> 1. Adaptec Easy CD Pro
>
> 2. Seagate Backup.
>
> Analysis of the issue is almost complete as of mid-April. Due to component level work that needs to occur, a delivery date for the fix in not yet available. An exchange will ultimately need to occur when the fix is available.
>
> Communication has gone out to small application developers and should minimize the issue in the long term. Updates will be communicated via the WWW at 'http://www.hp.com/isgsupport/cdr/' as to when the fix will be made available.
>
> While work is being completed by HP and its partners to fix the issue, it is recommended that the disc be read by a standard CD-ROM in the system.
>
> Thank You
> Debbie
> SureStore Support

Question (Write append error):

I frequently operate my HP 4020 CD-burner (or Philips CDD 2000, Grundig, or similar) in test mode and everything runs perfectly. But if I turn off the test mode, after a while the CD-Rs are trashed. MakeCD responds with: "write append error". This has never happened in test mode, but is very frequent when test mode is off. My friend has the same CD-burner. He did not have this problem when the burner was new, but now, some time later, he is getting the same problems. What has gone wrong?

Answer:

You most probably have a faulty CD-burner. You burner needs to be repaired. A new firmware or a new version of MakeCD will not help in this case.

A user claimed on Internet that HP expressed surprise that a user managed to burn 200 blanks using a SureStore 4020 before this error occurred.

Alexander Becker <alex@enjoy.regio.net> reported in <5eu67r$1q0@enjoy.regio.net> on 25.2.1997 that HP sent him new blanks without objection after he called them and faxed in the bill - he also claimed that he was even refunded the cost of the burner.

Other users have even exchanged their burners two or three times -- without long term success -- and have eventually been refunded.

One of the beta testers for MakeCD has told us that the following firm has good support for defect burners:

Repair 2000 Hardware Service GmbH
Werkstrasse 5
22844 Norderstedt
Deutschland
Tel.: 040 5225031 (ask for Mr. Peter and describe the problem)
Fax: 040 5264811

If you are dexterous, you may be able to resolve the problem by thoroughly cleaning the burner yourself (remove any dust, and oil the carriage with a suitable lubricant). Any repair that you attempt is at your own risk and we cannot and will not offer you further advice on repairing units yourself.

Question (Problems with Phase 5 host adapter):

I have a Phase 5 SCSI host adapter and CD burning simply doesn’t work for me. What can I do?

Answer:

Make sure that you are using at least version 8.1 of your SCSI driver. For example, type ‘version full 1230scsi.device’ (you may have to replace ‘1230scsi.device’ with another name) and check if you have version 8.1 or higher. If not, obtain an update from Phase 5.

Question (All sorts of problems):

I am having all sorts of problems with my CD-burner. Sometimes

fixing fails, sometimes the written data cannot be read, sometimes the wrong directory is shown, sometimes a silly error report crops up, or the burner hangs. I am totally dissatisfied. What can I do?

Answer:

There have been several people with one or more of the above problems. It is difficult to find the cause from a distance, although we have been able to help some people.

1. Use quality media only. If you have problems, try a few media of another brand. You can read about the experience of other MakeCD users with regards to certain blank brands in 'doc/Compatibility'. Try those media reported as the most reliable.

2. Check your cabling and the termination of you SCSI chain. Try to shorten the SCSI chain to its minimum. Only use thick SCSI cables with good shielding. Please avoid cheap cables!

3. Boot with a virgin OS installation and without additional tools, then try MakeCD. Hacks sometimes cause programs to malfunction.

4. Do you smoke in the vicinity of your CD-burner? If yes, you should certainly try cleaning the lense of your CD-burner. A user who smokes has told us that he has burnt the first half of a CD with a dirty lense and the second half with a cleaned lense. The difference on the CD-R was clearly visible -- and CD-Rs burnt with the cleaned lense worked suddendly properly again. Similar problems can also be experienced by non-smokers -- e.g. through candles or dust.

5. Try connecting your CD-burner to another power supply unit. One user has enormous problems with his brand new Yamaha CDR 200, used with an (AMIGA and a PC. Fixing often failed and the written tracks could not be read in many drives. He was using a PC mains adapter for the CD-burner. He tried the burner with the A3000 mains adapter, and suddenly everything started working perfectly -- similar to a cleaned lense (see above). There was presumably a defect with his PC mains adapter. A similar fault is also imaginable if the mains adapter is overloaded. The nasty thing about this was that it was not obvious that the mains adapter was faulty - the burner was obviously getting power and was even burning. So this is always worth bearing in mind.

6. Put your CD-burner into its own SCSI case. Some CD-burners do not like operating at warm temperatures and can produce the most bizarre results when installed in a SCSI tower. Giving a burner its own external case with a good fan can work wonders.

7. You can clean your burner at your own risk. Dust clusters can sometimes block the mechanism so that the laser can no longer move freely on the carriage. This can produce peculiar results. Cleaning (and perhaps after oiling the mechanism with a suitable lubricant) often helps. The authors of MakeCD have never tried this and are unable to help. Do not

try this if you are unsure, and remember, it is at your own risk.

Question (CD-R "cannot be written to"):
I have a Yamaha CDR100 and write a track to the second session in test mode. I then try to write for real, and the burner suddenly reports that the inserted medium cannot be written to?!

Answer:
Yamaha CDR100/102s sometimes appear to have problems with the update after writing in test mode. Existing tracks are no longer listed, and the CD-R is no longer seen as a CD-R, but as a normal CD. This was reproduced several times, and each time the output in the target CDR window was different.

In this case all you can do is take out the CD-R and insert it again. Unfortunately, this means that the automatic "Write after test" is no longer possible.

Question (Ricoh loses tracks):
I have a Ricoh 1420C V1.6x. With some CDs, including my own CDs, the last track in the track list is swallowed and the Target CDR Window claims that writing was interrupted. Repeated updates of the contents does not help. Can anything be done?

Answer:
This seems to be a SCSI problem. Some people have no problems and others even have SCSI hangs. A tester has told us that he solved exactly the same problem by turning off reselection for the burner, turning off synchronous transfer mode for his hard drive, and resetting the SCSI bus. He was using the CyberSCSI controller.

Question (JVC problems):
I am using a JVC-burner and have several problems. When will there be a driver that works properly?

Answer:
The problem is not so much the driver, but rather the defective firmware of the JVC XR-W2010 V1.51. You can read more about this under: 'doc/Compatibility'. The major problems are:

Reading transfers defective data without error report. If you have a Meeting Pearls III or IV, register your JVC burner as a CD-ROM drive, insert the Meeting Pearls and click on 'English'. An amigaguide document should appear with a link which can be used to check the CD. Try checking the CD! If faulty files are shown without a read/write error, your JVC burner is most probably transferring defective data without error reports!

Rejection of write commands
Under certain conditions some JVC CD burners apparently reject write or fix commands with 'ILLEGAL COMMAND'. This can sometimes be solved by shortening the SCSI bus (as Patrick found) or by using another, better medium (as we were told by JVC). Try both! Also, a heat problem was reported (the burner

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          was getting to warm in a casing with a poor fan). In one case
          the casing had been tightened so much that the burner was
          slightly warped and developed a mechanical problem.

    Other errors
          Please see the JVC section in 'doc/Compatibility'.

Question (JVC problems with audio CDs):
     I am having problems with my JVC XR-W2010 CD-burner, especially
     with audio CDs. What can I do about this?

Answer:
     Make sure you are using the latest firmware version (V1.51 or
     higher). Older versions have a lot of problems with audio CDs.

Question (JVC: Medium Error):
     When burning with the JVC XR-W2010, the burner reports "Medium
     Error: WRITE ERROR". What shall I do?

Answer:
     One user experienced this error report only when writing at double
     speed. It was fine at single speed, although this could depend on
     the medium used.
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SCSI problems, hanging SCSI bus
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Question (SCSI problems):
     I have a big problem. Nothing seems to work. MakeCD or the SCSI
     bus keep hanging. What can I do about this?

Answer:
     Your CD-burner and/or your SCSI host adapter is faulty.  Sorry,
     but we are unable to help you in this instance. Please check our
     compatibility list - perhaps you will find a user there with a
     similar configuration who has managed to resolve the problem.

     If this doesn't help, try the following -- in test mode!

        · Select a small chunk size (32 or 64KB) in the settings
          window and see it that helps. We have been told that this
          helps with some Phase 5 host adapters.

        · The chunk size plays a major part as to whether hanging
          occurs with the Philips CDD 2600 (and possibly with other
          CD-burners). Some people report hanging when the chunk size
          is too small, but in our experience hanging occurs when the
          chunk size is too large. You may need to experiment a little
          here.

        · Turn off parallel read/write in the settings window and try
          testing.  If you turn off parallel read/write, the buffer
```

will be constantly almost empty. This is normal but also more dangerous since a buffer underrun is more likely. In this case there is little point in selecting a large buffer. 1MB should be more than sufficient.

- Turn off reselection for all devices, especially for the CD-burner. We have included a small tool with most versions of MakeCDto turn off reselection for Commodore's V39/V40 scsi.device. If this helps, experiment with reselection until you establish which devices can have reselection turned on and which devices must have reselection turned off. If reselection is turned off, the same applies to the buffer behaviour as described above.

- Carsten Schlote (formerly with phase5) has tipped setting the CD-burner to a lower ID number than the hard drive which is being read. This can sometimes help with phase5 hardware and possibly other hardware.

- If nothing helps, try borrowing another host adapter and see if the results are any better when connecting the burner onto its one host adapter. Turn off reselection for the CD-burner, but turn on parallel read/write.

Question (Reselection):
I keep hearing about reselection, the buffer, and so on. What are these?

Answer:
Read the introduction for the chapter on the buffer in the MakeCD instructions.

Questions (Oktagon hangs):
My Oktagon hangs when I read or write audio or mode2 tracks. Will a newer version of the oktagon device help?

Answer:
This problem affects all currently available Oktagon versions ((i. e. up to and including version 6.12). You must turn off reselection for the unit of the CD-burner or CD-ROM drive using the program OktagonPrefs, otherwise the data transfer will only work for tracks with a minimum block size of 2048 bytes.

Other sources recommend turning off reselection and synchronous for all devices attached to the Oktagon and setting the chunk size to 256KB. In addition, you should set 'softXC???oktagon.device' as the device driver in place of 'oktagon.device'.

Question (SCSI problems):
I keep getting "buffer underruns" or the SCSI bus hangs. What can I do about this?

Answer (from 'John Hendrikx <john@globalxs.nl>'):
I have experimented with "Buffer Underruns" with reselection for my CD-burner turned off. The result was that the hard drive could do nothing while the CD-burner used the bus (which can be quite a long time). Turning on selection for my CD-burner and hard drive

sometimes led to SCSI errors. However, everything was fine with reselection on for the CD-burner only and not for the hard drive. This hardly affected the speed, since the hard drive (for which reselection has been turned off) does not use the bus for very long anyway.

I have successfully burnt CDs at quad speed using the Yamaha CD-burner, although I have an 030 system with 22MHz and only 8MB FastRAM. The data came from an IDE hard drive (I believe that the additional IDE controller simplified the matter somewhat. I was close to the limit using this configuration: one day I had a buffer run - it turned out that I had to run ReOrg over the source drive to make it fast enough again :-)

Anyway, a few tips:

- If you think that your hard drive is too slow, try running ReOrg over the hard drive.

- Use large block sizes on your image partitions. I use 2KB blocks on all image partitions (many people use even larger values, but I like to be able to use such partitions as normal partitions too). Fragmented files slow down the hard drive, so small block files sizes are best avoided.

- Check the reselection settings of your SCSI devices. Reselection does not have to be activated for all fast devices (e. g. hard drives), but it probably needs to be turned on for the CD-burner (I have turned off reselection for all my devices apart from the burner -- works brilliantly). If you would like to see the effects of reselection, try the following: turn on parallel read/write; write a large image file to a CD in test mode. Now use a reselection tool and try turning reselection on/off for the CD-burner. As soon as it is turned off, the buffer shrinks. As soon as it is turned on, the buffer fills again in a matter of seconds (this may be different with your configuration - try it anyhow).

- If you suspect that the SCSI host adapter simply isn't fast enough, or if turning on reselection for the CD-burner generates SCSI errors, try using a different SCSI host adapter (a second SCSI adapter or simply an IDE controller). That should work even better, since reselection problems should no longer play a part.

Turning off reselection for your hard drive can actually improve the speed (at least if only one is in use). I measured an almost 20% speed increase with my Seagate hard drive when turning off reselection (it has problems with reselect turned on anyhow -- that was the cause of my hanging SCSI chain, as I eventually found out, not my Yamaha CD-burner.

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Questions about audio CDs
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Question (Audio file formats):
     Which audio file formats are supported by MakeCD?

Answer:
     MakeCD only supports audio data at a frequency of 44.1 khz in 16
     bit stereo. With MakeCD 2.4 this data must exist in pure form
     without additional information (sometimes termed CDDA format) or
     as AIFF.

     If the additional information is missing, the settings for byte
     order (i.e.  Motorola or Intel) and the file length ("multiple of
     the block length" or "any") are used. This does not apply to the
     AIFF format, since it does contain additional information.

Question (AIFF length incorrect):
     I have converted sound data into AIFF, but when I select the file,
     MakeCD reports the AIFF file length as incorrect. Why doesn't
     adjusting the audio length help?

     Answer: The exact error message is presumably as follows:

          Source file »filename« has wrong type »wrong AIFF« or wrong
          size 0.  Track 1 requires »Audio (normal)« with block size
          2352.


     This error occurs not because of the size, but because of the file
     format.  It is admittedly an AIFF file, but does not contain audio
     data that can be burnt directly to the CD (see the question on
     supported audio formats).

     The audio length settings are only used for data without additional
     information, and are therefore not used with AIFF.

Question (Audio data variation):
     I have read an audio track several times, written to various
     files, and then compared the files. Unfortunately I notice that
     the files are completely different, although the audio data sounds
     fine. Surely this is not normal - I thought that the data is
     stored digitally -- the files ought to be identical!

Answer:
     It is true that the data is stored in digital form. Even so, it is
     difficult for your CD player, your CD-ROM drive and your CD-burner
     to control an audio track with exact precision. Even the better
     CD-ROM drives do not always begin reading an audio track at
     exactly the same byte.  The result is that the bytes in the two
     image files are slightly out of synch (for example, the TEAC
     CD516S V1.0D tends to vary between 20 to 100 bytes). A byte
     comparison of such image files will leave the impression that the
     files differ greatly from one another - in reality, there are
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merely slightly out of synch by a small number of bytes. One second of music corresponds to 176400 bytes. So, if the drive starts reading 100 bytes to late, you are actually loosing a mere 0.0006 seconds of music.

Since there are on error reports and correction for audio data, it is certainly possible that differing data is transferred from time to time, especially if the medium is not of the highest quality. Whether these disturbances are extreme or not very much depends on your CD-ROM drive. Some CD-ROM drives are very good at reading scratched CDs, while others will transfer corrupted data.

Question (Start of song missing):

When reading audio data I notice that some songs are missing the start of a track -- perhaps half a second. This is not noticeable with some songs, but is very annoying with others.

Answer:

The problem lies with your CD-ROM drive or CD-burner. Some CD-burners (e.g. Yamaha CDR 100/102 and Philips CDD 2600) start reading audio data in the wrong place if the pregap of the first track has an unusually high value. You can recognize this if the first track does not begin at block 0, but, for example, block 33. Drives which exhibit this problem start reading the first block too late (and will continue reading a little beyond the last block).

You can get round this problem by modifying the start block for audio data in the MakeCD settings. Enter the number of the first block of the first track on the audio CD and you should get the full song. So, if the first track starts at block 32, enter ‘32’.

Please bear in mind that this change will only affect those tracks that you select after changing the settings. If you have already selected the tracks, you need to select them all over again, since the block numbers are automatically corrected when choosing the tracks and not when the tracks are first read.

Question (Cyclic cracking in audio data):

I have burnt an audio CD but can hear a cyclic cracking in the music. I have checked the image files, and the cracking is present there too. What is causing this?

Answer:

Some CD-ROM file systems regularly check to see if a CD is in the drive. The method used by AsimCDFS can corrupt audio data. MakeCD tries to deny such accesses by file systems, but technical limitations mean that the problem can still arise. Turning off the CD-ROM file system normally resolves the problem.

Question (Errors in audio data):

I have read audio data from a music CD and there are detectable errors at random positions. What’s going wrong?

Answer:

Somebody has reported such a problem, which arose as soon as a Zip drive was attached to the same SCSI bus. As soon as he removed the

Zip drive, the phenomenon disappeared. Another person reported that more noise was generated with reselection turned on than with reselection turned off. You best bet is to save the data to RAM or to use a huge buffer. We have also been told that you should check the termination of the SCSI bus in this case.

Question (CD-ROM drive too slow with audio CDs):
If I copy an audio CD, the data stream breaks off after a while. My 8x CD-ROM drive is evidently not fast enough, even though my burner writes at double speed only. What is going on here?

Answer:
Many CD-ROM drives reads CDDA data at single speed only. When copying an audio track, you should set your CD-burner back to single speed -- or use temporary files.

Some SCSI host adapters (e.g. Oktagon2008 v6.8) cannot transfer certain block sizes at full speed ((e. g. block sizes that are not to the power of 2 or are not a multiple of 256 bytes). Oktagon informed us that it would only transfer at about 230 KB/s. A CD-ROM drive that reads at double speed needs the audio data to arrive at about 345 KB/s.

The future ROM update for the host adapter may remedy the problem -- or, of course, another SCSI host adapter.

Question (Audio tracks missing when using CD player):
I tested MakeCD by writing a single audio track. I then fixed the session and inserted the CD in my CD player. Worked perfectly! Then I wrote another track, but this was only recognized by my CD-ROM drive, and not by my CD player. Why?

Answer:
CD players recognize only those tracks contained in the first session. You should not have fixed after the first track, but only then, when all tracks had been written.

But the CD is not totally unusable. Simply write a data image to the remaining space! Then all you need is a file system that supports multisession CDs in order to access your freshly burnt data CD.

Question (Philips -- Audio problems):
I would like to read some audio tracks with my Philips CDD 2600 CD-burner. The inner tracks can be read without problem, but I get errors with the outer tracks. What can I do about this?

Answer:
This is a typical problem with the Philips CDD 2600 and HP SureStore 6020 (and similar drives). Reduce the read speed for audio data using the settings window to single or double speed. This usually helps.

Question (toshiba -- audio problems):
I am using a Toshiba CD-ROM drive, CD-ROM XM-3701TA. It will not read audio data correctly. My firmware version is 3055 (12/25/95). Please can you support this drive too?

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Answer:
     You are using a defective and outdated firmware version.  Obtain
     the latest firmware version from the Toshiba BBS: +49 2131/158123.
     The file that you require is 'tosh-up.zip'. One user has told us
     that he could not read CDDA data at all. After he obtained the
     update, everything was fine. Perhaps this will help with similar
     problems involving Toshiba drives.

Question (Ricoh -- audio problems):
     My Ricoh 1420 CD-burner, firmware 1.6x, reads audio data, but the
     quality is very poor. What can I do about this?

Answer:
     We have heard that the Ricoh 1.6x firmware reads with multiple
     speed but with a loss in quality. Try adjusting the speed in the
     MakeCD program settings to single or double speed, or try using
     firmware 1.4x. You require another digit in place of the "x"
     depending on whether you are using the 512 KB, 1 MB or 2 MB Ricoh.

Question (pause between audio tracks):
     How can I change the pause length between the tracks?

Answer:
     MakeCDcurrently uses Track-At-Once-Mode only, i. e. it always
     transfers the raw data for a single track and leaves it to the
     burner to create checksums and write the pauses and contents. This
     has the advantage that the writing between the tracks can be
     interrupted for any length of time and multisession is possible.
     Only the Disc-At-Once-Mode would permit you to determine the pause
     lengths.  MakeCD will support this mode as soon as possible.

Question (Noise instead of music):
     I have burnt an audio CD, but the CD does not contain the audio
     tracks selected, merely noise. What have I done wrong?

Answer:
     Presumably the audio data byte sequence is incorrect.  MakeCD can
     create and use data in either the Motorola format (MSF) or the
     Intel format (LSF). You can select this in the settings. There is
     no method for MakeCD to find out which format audio data has been
     saved under, so you must enter the correct value. The audio format
     that you select will then be used both for reading and writing
     audio data.
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Questions about data CDs
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Question (Drive shows wrong session):
     I have a CD-R containing several sessions, but my drive shows the
     wrong session.  It should show the last session written, but it
     always shows the previous or last but two session. How can I
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access the data I have just burnt?

Answer:
There are two possibilities: either your CD-ROM file system is not working properly (try a different CD-ROM file system), or your drive has a problem with multisession CDs containing too many sessions. These drives stop reading the CD from a certain session. Unfortunately there is little we can recommend here -- aside from purchasing a new drive, We have got on well with the TEAC CD516: the Teac recognized and correctly read all sessions on a CD-R that has problems when used with a Toshiba drive or CD-burner.

Question (Multivolume):
I would like to make a multivolume CD by copying the data tracks from several fairly empty CDs onto a single CD-R. I have tried this by reading the tracks from the source CDs and then copying them one after the other to the CD-R, fixing the session each time -- anyway, I have tried twice without success - both times, only the first track can be read. What am I doing wrong?

Answer:
Each multisession track or multivolume track that is not the very first track on the CD-R must be specially made since the data track is different -- according to which block the track starts at on the CD-R. Tracks set to base block 0 cannot be written to another position on the CD-R. MakeCD warns about this from V2.0 or higher - previous versions gave no warning (base blocks were not even supported then).

Question (Multivolume confusion):
I have just made a multivolume CD and experimented with a few file systems, but I can only see either the first or the last volume. Where are the other volumes?

Answer:
Unfortunately, many file systems do not support multivolume yet. At the time of writing, we are aware of just one file system with multivolume support: CacheCDFS from the IDEfix '97 pack. We expect that multivolume will be supported in future versions of AmiCDFS and AsimCDFS.

Question (Creating multisession CDs):
How do I go about burning a multisession CD?

Answer:
First read the instructions, then follow the instructions!

Question (Multisession Confusion):
I have made a multisession CD. The first session contains about 200 MB of data and in the second session I have about another 100 MB of data. Workbench displays just 100 MB - surely this should be 300 MB? I have tried fixing the CD-R, but that doesn't help.

Answer:
This is not a problem. Although the new track in the new session shows only the number of bytes contained in this track, all the data is there. Try it and see!

Question (Size of data on CD):
When I use Meeting Pearls II, Workbench says, for example: 650 MB used. But when I calculate the size in bytes using DirOpus, I do not get the anticipated 680,525,824 bytes, but about 50 MB less. What has happened to the missing 50 MB?

Answer:
A CD is written with a block size of 2048 bytes. This means that on average there are 1024 bytes waste for each file. So 50,000 files would account for a waste of about 50 MB. Well, how many files does DirOpus count for Meeting Pearls II? ;-)

The system data (directory structure etc.) uses very little space under ISO9660 and RockRidge.

Question (Protection bits cannot be seen):
I have read that MakeCD can write AMIGA protection bits and file comments. I have written an image file and selected both RockRidge and AMIGA attributes -- but when I register the image file, all files have standard protection bits. The script bits are still missing. What has gone wrong here?

Answer:
You must use a file system that supports AMIGA protection bits. AmiCDFS2, which is freely-distributable, support AMIGA protection bits from V2.30. CacheCDFS (included in the IDEfix ’97 pack) also has support for the Amiga protection bits, and, in addition, also has multivolume support. AsimCDFS supports Amiga protection bits from V3.7 (L:AsimCDFS contains an old version string! "AsimCDFS 3.6 (05.11.96)").

Question (File system for CD-burner):
I have an A3000 (scsi.device V40.12) and a Yamaha CDR 100. MakeCD works brilliantly. I have no problems at all. The Yamaha seems to be a very good writer! However, my file system is unable to mount CDs on the CD-burner. MakeCD can read the data track, but my file system (BabelCDROMFS) comes up with "not a DOS disk". The same CD works fine in my CD-ROM drive -- even with the strange file system. This seems weird!

Answer:
We tested the same configuration and experienced the same problem. The Yamaha CDR 100 is indeed a very good writer and is not to blame for this problem. The scsi.device has problems controlling the writer with the trackdisk command. It is possible that the same problem will arise with the A2091 and other Commodore host adapters. We were able to solve the problem on the A3000 by installing the new V34 scsi.device.

If you do not want to install scsi.device V34, use a file system that employs SCSI-direct commands. AmiCDFS (shareware) would be a good choice. In any case, make sure that the file system uses SCSI commands (check the documentation of your file system). Then, everything should be fine.

Question (Checking data CDs):

How can I check that the data CDs I create really are okay?

Answer:

We check our data CDs using 'brik'. Brik is included with some versions of MakeCD. It can also be found on the Meeting Pearls III or IV CD-ROM, or on our home page. Brik generates CRC32 check sums for one or all files. You should generate the checksums for the data on your source partition. After burning, you can then check -- with the help of brik -- whether the data is identical to that on the source partition.

The version of brik included with MakeCD includes a short description file to assist you in using brik.

Question (Slow image generation):

I have tried to create an image file using MakeCD. But regardless of whether I write it to the hard drive as an image, or send it directly to the CD-writer -- it is incredibly slow. Can't you optimize this a little? My processor is normally very fast and I have plenty of memory.

Answer:

MakeCD is already extensively optimized. But we have heard of such cases in the past. These problems were traced back to a configuration error in the mask value of HDToolBox.

Proceed as follows -- we accept no responsibility for any damage to your rigid disk block! You make all changes at your own risk! If you destroy your RDB, don't format the whole disk -- try taking a look at Angela's RDB-Salv first. (http://home.pages.de/~Angela/rdbsalv.html). RDB-Salv can save lost AmigaDOS partitions!

1. Start HDToolBox
2. Select the hard drive containing the partition that is to be used for creating the image.
3. Click on 'Partition Drive'.
4. Click on 'Advanced Options'.
5. Now select the partition which you read the data from.
6. Click on 'Change ...'.
7. You should now see 'Mask'. Your value is probably '0xfffff?', where 'f' is often 'c', 'e', or 'f'. Add two 'f's after the five 'f's (e. g. '0xffffffc' and then save.
8. Exit HDToolBox and restart your AMIGA.

Now try creating another image using MakeCD, storing it on the partition that you have just edited. If the process is much faster, change your other partitions in the same manner.

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Question (ISO image contains MakeCD):
     I have created an ISO image which contains my data. But once I had
     burnt it to my CD-R, I noticed that MakeCD was also recorded into
     the image. I am a registered user and do not find this amusing!
     Please help me stop this!

Answer:
     We have not intentionally packed MakeCD into your image. To be
     more precise, you have done this. ;-) When you were in the settings
     and set the path to be included in the image, you probably clicked
     on "New" too many times. This would generate empty entries in the
     list and cause MakeCD to record the directory "" into the image.
     The directory "" usually contains MakeCD. Please make sure that
     you do not create empty entries in this list and you should be
     okay.

Question (ISO 9660 directory levels):
     Before I burn an AMIGA CD, I check all directories to ensure that
     I do not exceed eight directory levels, so that the image is not
     defective. When are you finally going to install the corresponding
     function?

Answer:
     Don't worry about this -- even if you do exceed the eight directory
     levels, the image is by no means ruined. In fact, such images are
     can be read without any problems at all on the AMIGA. It is only
     on DOS machines that you are unable to access the deep
     directories. But this is not a problem for most AMIGA users. All
     the same, we will install a suitable function as soon as time
     permits.

Question (ISO 9660 directory levels):
     Okay, so I now know that the restriction to eight levels does not
     apply to the AMIGA. But what, then, is the directory level
     restriction for CDs on the AMIGA?

Answer:
     There is no such absolute limit on the AMIGA. However, directories
     become so unwieldy at a certain depth (very long paths etc.), that
     many AMIGA applications will probably crash or malfunction when
     presented with such directories.

     You should be able to burn as many AMIGA directory levels as you
     wish on the CD-R.

     At a certain depth (undefined - this can be different each time),
     the stack for MakeCD will run out and the program will crash.  But
     this should only happen at a very deep directory level.
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Questions about copying CDs
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Question (CD Back-up Copies):
     How can I make a back-up copy of my diverse CDs (with several
     tracks to)?

Answer:
     In the Audio section of the settings window you have to use as
     Start 0 blocks and Pause 152 blocks. Back in the main window you
     can add the entire CD via the menu. When required (if the
     performance is not sufficient), you can turn on temporary images
     and write the CD.

     You can use these settings to copy most, but not all, CDs
     successfully.

     Disk-At-Once is required for making 100% identical copies of CDs.
     This is planned for version 3.0 of MakeCD. Even so, the above
     method often suffices.

Question (Copying problems):
     I have tried copying a CD to a CD-R. I read from the CD_ROM drive
     and wrote directly to the CD-burner, i.e. without using temporary
     files. My CD-ROM drive reads at 12x speed and my CD-burner writes
     at quad speed.  Suddenly, the speed of the CD-ROM drive falls
     dramatically and the buffer empties out. Another saucer.:-( Please
     repair this.

Answer:
     We cannot repair this. CD-ROM drives often reduce their speed when
     they encounter a scratched surface that has to be read. Once the
     scratch has been passed, many drives then move speed up again,
     while others stay at the reduced speed. The latter is probably
     what is happening in your case.  You could try a firmware update
     for your drive that may correct this, or use temporary files for
     scratched CDs. It may also help to reduce the write speed.
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                Miscellaneous questions about burning CDs
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Question (Screenshots as bug reports):
     MakeCD aborts with an error. I enclose a screenshot of the
     requester by E-mail.

Answer:
     Please do not send us screenshots or error requesters! This
     burdens the Internet, and there are very few cases where a
     screenshot is required/helpful. Please use ASCII!

Question (Bug reports):
     MakeCD aborts with the error xyz. Any ideas?

Answer:
     If you can reproduce the error, you can help us by activating
```

'DEBUG=<file>' in the 'DEBUG=<file>' tooltypes. Then, restart 'DEBUG=<file>', reproduce the error, and send us the debug info.

Question (Burning CDs bit by bit):
Is it possible to burn a CD bit by bit? For example, I would like to burn a few audio tracks today, a few more tomorrow, and then fix the CD on the following day. Am I able to remove the CD from the drive in the meantime. Is there something else I need to know?

Answer:
Yes, in Track-At-Once-Mode the burning process can be interrupted for any length of time after the burning of each track. In addition, you are also able to take the CD-R out of the drive. You can even finish the CD-R in a completely different CD-burner. MakeCD automatically takes care of this for you. All the same, you should make sure that MakeCD does not fix the session without your explicit wish, since a CD player will only find the audio tracks contained in the first session, which in this case would not be your intention. So, make sure that you turn off automatic fixing.

Question (CD-R Size):
Today I am standing in front of a shelf with various 74 minute CD-Rs. Should I purchase the CD-Rs with 780 MB or the CD-Rs with 650 Mb? Actually, I would like to pack as much information onto the CD as possible, but provided that 780 MB CD-Rs are at least as good as 650 MB CD-Rs. Can I buy the 780 MB CD-Rs with confidence?

Answer:
You have fallen for a marketing ploy. 74 minutes are 74 minutes, that cannot be disputed. Both CD-Rs, however, store about the same amount of data. You will, of course, ask why the MB statements do not agree. This is quite simple: 330,000 blocks fits on a 74 minute CD-R. If you write 330,000 blocks to the CD-R, you end up with 330,000*2.048 bytes, i.e. 681,984,000 bytes (650 MB). Some firms mark state the capacity as 680 MB for marketing reasons (where 'M' no longer stands for "mega", but "million". If you then fill the 330,00 blocks of the CD-R with music data, you end up with 330,000*2.352 bytes, i.e. 783,216,000 bytes (746 MB), since music data does not require bytes for the sector header, ECCs or EDCs. To work the figures as much as possible, some firms then state the capacity as 780 MB or 783 MB.

In conclusion, one can say that 650 MB, 680 MB, 750 MB and 780 MB CD-Rs all have the same storage capacity.

Question (Target CD-R: inconsistent storage shown):
The space shown in the target CD-R window in not consistent. If I add the used and the available space together, this does not agree with the total size of the CD-R.

Answer:
This is a known problem and depends on your burner. Some CD-burners include the pause after the last track that has not yet been written, others count this as free space. This can lead to deviations of 2-3 seconds - just ignore this.

Question (Storage question):

How can I tell if all the files I select will fit onto a CD?

Answer:
MakeCD is calculating since version 2.2 the amount of data to be written and is comparing this size with the amount of free space on the inserted media. If not enough space is available, a warning will be shown.

Question (Draco):
Shouldn't MakeCD run on the Draco too? I am experiencing all manner of problems.

Answer:
You are presumably using more than one memory module with the Draco. Place a large memory module (32MB if possible) in the first connector and make sure that there is still memory free on this module before you start MakeCD. MakeCD is stable if you have all data necessary for SCSI transfer in this first module. The buffer, whose size can be selected in the settings, can be stored in the other memory modules, but the (small) "IORequests" and SCSI commands must be stored in the first module.

Incidentally, this is a bug in the dracoscsi.device - there is nothing we can do about it. If you follow our instructions, you should be able to get around the problem.

Question (Hanging SCSI bus):
My burner frequently hangs after a while. The SCSI bus seems to be blocked. What can I do?

Answer:
Try turning off reselection and synchronous transfer mode. There is a tool, 'CTRLscsi' (Archivname: 'HWGCTRLscsi.lha'), for V39/V40 Commodore SCSI devices. This tool is included with most versions of MakeCD and lets you turn reselection on and off for each unit.

See also
SCSI problems
Question (Drive does not show all tracks):
I have a CD-R containing several tracks, but my drive does not show all tracks -- the last few tracks are always lost. This means that I am unable to use multisession or multivolume CDs as intended. What am I doing wrong?

Answer:
You have purchased a poor drive. Good drives show all sessions; bad drives can have problems and show only those tracks in the first few sessions.

Question (Corrupted data CD):
I have created a data CD using MakeCD. No errors were shown, but the image must have been corrupted, since several icons burnt to the CD are missing on the Workbench, and numerous archives are corrupt. I have tried using another version of MakeCD, resulting in another defect CD-R. Sometimes even the disk icon fails to appear, and sometimes the file system even crashes. My configuration is: A4000, Yamaha CDR 100, Toshiba 4101, Noname blank.

Answer:
Have you tested the CD on your Toshiba? Toshiba drives (and drives from other firms too) have always had problems with specific types of CD-R. The same blanks can be read without problem on other drives. Try this - your two apparently defect blanks can probably be read perfectly on another drive (e. g. TEAC). See the file 'doc/Compatibility'. This contains details on some CD-Rs which we have found to be reliable.

Question (Read problems):
My CD-burner used to work perfectly will all types of CD (silver CDs, CD-Rs, etc.). For a while now, I have been able to read silver (pressed) CDs only. I experience problems trying to read CD-Rs - even those that I wrote a few months ago on this very CD-burner! What can I do about this?

Answer:
Somebody described exactly the same problem to us. After using a CD-cleaner, everything was fine again. Such problems are particularly common among smokers.

Question (Transfer rate):
The transfer rate for my CD-ROM drive is faster than it should be - or at least it appears to be. MakeCD's write window shows a very high transfer rate for the drive. Why?

Answer:
MakeCD the interval between sending a read request to the CD-ROM drive and receiving back the request together with the data. That is all. Some drives used intelligent buffer technology while MakeCD is not using the drive to fill its buffer with data that it hopes will be requested on the next access to the drive. The drive often "guesses" correctly and the drive is able to send the data directly from the buffer to MakeCD without even having to access the CD. This is why the drive appears to be so fast. Were it not for the small pauses, the value would be slower.

Question (CD- drives):
What are CD-RW drives? They have something to do with CD burning too, don't they?

Answer:
CD-RW drives are CD-burners which can also write to the new CD-RW media. CD-RW media are special CD-Rs which, although significantly more expensive than CD-Rs, can be written to up to 1000 times, although they can only be used with CD-RW drives. CD-RWs cannot be read using CD players or CD-ROM drives built prior to 1997. Only some drives built before 1997 can also read CD-RWs.

Question (Fixing the CD-R):
I am unable to fix my CD-R! I have fixed all the sessions and now I want to fix the CD, but I cannot!

Answer:
You can only fix the CD-R if you have written tracks to the last

session. When you fix a session, a new session (without tracks is opened. This is why you cannot fix the CD-R, because you have not written further tracks since fixing the last session.

When you fix a session, the lead-in for this session is written. This includes the track table of contents for this session required by the CD-ROM drive to find the tracks. This is why unfixed session cannot be read on CD-ROM drives. The lead-in also contains information about the start of the next session, even if this is empty.

When you fix a CD-R, the principle is exactly the same, except that, instead of the information about where the next session begins, a marker indicates that there are no more sessions on the CD.

Since a drive runs through all the sessions one by one when reading the tracks, it will stumble at the last session if the CD-R has not been fixed. This is because it encounters unreadable data when searching for the last session. This slows down the reading of the track's table of contents. For this reason it is best to fix the CD if you are sure that no further tracks need to be written.

Question (Safety measures when burning):
What do I need to turn off while I am burning a CD? I know that I should turn off my screen blanker as well as quit any programs running in the background. Is there anything else to worry about?

Answer:
To be honest, we, the authors, turn off absolutely nothing when burning a CD. Our screen blanker continues to run and does not interfere. Sometimes we type in texts during burning -- without any problems.

It only becomes critical if a program crashes (so only use stable programs), or if a program takes up lots of processor time at a higher priority. We have been told that the switching of high resolution screens on graphics cards can cause a buffer underrun if the graphics card driver is set to a higher priority. We have not encountered problems using normal AMIGA-Screens.

Question (CD-burner recommendation):
CD-burners
Which CD-burner should I buy?

Answer:
We always recommend Yamaha CD-burners (CDR 100, CDR 102, CDR 200 and CDR 400), as well as the Ricoh MP6200S. It is well worth looking at the file 'doc/Compatibility'.

Question (CD-ROM drive recommendation):
I am planing to buy a new CD-ROM drive. Any tips?

Answer:
Angela has a TEAC CD516S (SCSI), which also has an ATAPI version, and is very satisfied with it. The drive should theoretically read

at 16 speed - on the A3000 we could only measure 12 speed. But the drive has a number of advantages:

- Reliable reading of audio data (CDDA). There were no discernable differences in the CDDA files on the A3000 when reading at quad speed, with the exception of being a few bytes out of synch (which is to be expected). When reading at 8 speed, there were a few small inaudible changes every million bytes or so.

- Excellent error correction. Even scratched CDs can be read well. The same goes for CD-Rs which were completely unreadable in other drives.

- No detectable reselection problems, although the A3000 is very susceptible to this.

- Quiet -- the drive is supposedly quieter than most other 16-speed drives, although we have not been able to compare the noise to other 16-speed drives.

- FlashROM -- the firmware can be updated with the help of a PC should the need arise.

- drawer technology, so caddies are not required.

These tests were carried out with a TEAC CD516S, firmware version 1.0D. The firmware version 1.0g is reputedly even better and resolves a few problems. e.g. firmware version 1.0D swaps the audio channels of the TEAC, but this has been resolved in firmware version 1.0g. Therefore we heartily recommend updating to 1.0g.

Question (CD-burner support):
When are you going to support my CD-burner XYZ?

Answer:
It is not easy to support all the different makes of CD-burner, because there is no SCSI command set which has been implemented for all CD-burners. Try our MCC driver for modern CD-burners. If this driver doesn't work, try the other drivers. If none of the drivers work, we need the programming docs for your CD-burner and often a loan unit for this version. Check 'doc/Compatibility' to see if support is already planned for your drive.

Question (Add entire CD or image file):
What is the difference between 'Add entire CD' and 'Add image file'?

Answer:
'Add entire CD' reads all the tracks from your read drive and adds them to the track list. Track types are set automatically.

'Add image file(s)' opens a file selection window which you can use to select one or more image files to be added to the track list. For technical reasons, the track types cannot be recognized and set automatically -- you may need to set this yourself.

Question (Block medium):
What do I do about the block medium. Do I need to create a special partition for it?

Answer:
Actually, even a hard disk would be appropriate. It would then be very easy to mount a CD-ROM file system on this disk so that the image can be tested. This saves you having to use cdromemu.device.

Also, you can send such disks to a press works.

If you are not sure what you are doing, you are well advised to leave the block medium alone - if you make a mistake, you can destroy a lot of data.

Should you nonetheless proceed and end up destroying the RDB, perhaps RDB-Salv can help you:
'http://home.pages.de/~Angela/rdbsalv.html'

Question (Corrupt CD):
I have written a CD which seems to be defective. My CD-ROM drive cannot read it at all. :-(

Answer:
Fix the session or the CD-R so that you can access the CD using the CD-ROM drive.

Make sure that you are not using a cracked version of MakeCD. Many crackers are incompetent and often cause far more damage to the program than they realize.

Please don't blame us for viruses on cracked versions. You should download a clean, slightly limited version from our home page.

Question (Root directory):
This is a nice feature, since you can use the name of the track as the name of the ISO image. This saves time as well. The files are always written to PROGDIR: -- except if you change the path by hand. This can be irritating. Please can you add a feature so that you can chose the default directory?

Answer:
You are referring to the 'Root directory' gadget in the top left of the main window. Simply enter your work directory there.

Question (Read error):
I want to read a CD with data and audio tracks. At the end of a data track, MakeCD reports a read error!?

Answer
The table of contents (TOC) of a CD only saves the positions where the CD tracks begin, not where they stop or how long they are.

On reading a CDs table of contents (TOC), MakeCD attempts to strip the pause after a track from the length of the track. For technical reasons, this only works if the pause after the data track is not unusually long and if the CD shows no read errors at the end of

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     the track (e. g. through scratches).

     If the method used to determine the track length fails, you can
     either reduce the track length before reading, or ignore the error
     by selecting "Use File" in the error requester.

Question (Problems not concerning data tracks):
     Reading and writing is fine with data tracks, even with
     disconnect, but I get problems with other track types. Why?

Answer:
     Some SCSI host adapters increase their performance if you e. g.
     make assumptions about the block size, z. B. that the block size
     is a power of 2 or a multiple of x bytes (x = 32, 64, ...). These
     assumptions are wrong for unusual block sizes such as 2352 bytes
     (audio tracks) and that will cause the host adapter to fail.

Question (Repairing CD-Rs):
     Which burners can I use in conjunction with the repair option in
     the "Target CDR" window? What will be repaired?

Answer:
     If the writing was interrupted by a power failure, the Philips
     burners and compatibles offer a command so that a defective CD-R
     can be used again -- but only if the CD-R was not removed from the
     drive! This is the feature used by the MakeCD Philips drivers.

     The Yamaha CDR100/102 and compatibles do not support repair.

     The Sony 926S, Yamaha CDR200 and Yamaha CDR400 have a very
     powerful repair command which can even cope with defective CD-Rs
     that are not recognized at all on other drives.

     Most devices finish the last track automatically should the data
     stream be interrupted and the burner is still running. The track
     is then too short, but at least further tracks can be written to
     the CD-R.

Question (CD-R label):
     I have removed a small label from the CD-R. I have accidentally
     removed a some of the golden surface at the same time (now stuck
     to the label).  There is now a small hole in the middle of the CD
     which can be seen through. Can I paint over the hole? I have
     already tried putting the label back, but the CD still cannot be
     read.

Answer:
     No, I'm afraid that the disk is damaged beyond repair.
     Unfortunately, removing the label often damages the reflective
     surface, destroying the CD.
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Questions concerning the GUI
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Question (MUI):
     When will MakeCD have a MUI user-interface? I have already
     registered for MUI and don't want to register for Triton too!

Answer:
     We currently have no plans for a MakeCD MUI user-interface.  If
     someone would like to program a MUI interface, s/he should contact
     Patrick.

     Triton allows the integration of gadtools gadgets into a program
     and saves us time calculating the gadget positions ourselves. From
     the user's perspective, the difference between gadtools and Triton
     is scarcely noticeable.

Question (Online help):
     The online help causes problems with CycleToMenu and MagicCX. What
     can I do about this?

Answer:
     You should not install hacks. Well, you supposedly don't want to
     remove these hacks. So we recommend that you turn off the online
     help once you are familiar with MakeCD. Please bear in mind that
     the bubble help comes from triton.library - we cannot change the
     way it works.

Question (Save window sizes and public screen):
     I want to save window sizes or have MakeCD run on a public screen.
     Is this possible?

Answer
     The windows come from triton.library, so you can use the triton
     Preferences editor for both. You do not have to register triton
     for this -- although Stefan Zeiger would not complain :-)

     You can find the complete triton system including the preferences
     editor on Stefan Zeiger's home page
     'http://home.pages.de/~szeiger/'. For further information, please
     see 'doc/Triton.readme'.

     Here is a section from the trition manual:

          If you want to register, please send DM20, US$15 or an equal
          amount in any other valid currency to me. See Support, for
          addresses.

          Send money by EuroCheque (only in German Marks (DM)!),
          postal(!) money order or cash! It's impossible for me to cash
          in foreign cheques, even if the amount is in DM.

         EMail:
               'triton-support@laren.rhein-main.de'

         Mail:
```

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Questions about the settings
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Question (Device selection window crashes):
     MakeCD crashes if I try to change my burner in the device
     selection window. This happens occasionally for one of my friends -
     another friend has never had this problem.

Answer:
     We haven't been able to find a bug in MakeCD that could cause
     this. We have attached the Plextor burner to an A3000 and run
     HDToolBox. The program crashed while HDToolBox was scanning the
     SCSI bus.  We have occasionally experienced this with the Yamaha
     CDR 100 and JVC XR-W2010, although we were able to solve the
     problem by changing the order of the devices in the SCSI chain.

     MakeCD tries to select trackdisk compatible device drivers with
     the help of NSD. Device drivers containing bugs can cause crashes.
     Please use NSDPatch from Heinz Wrobels and NSDQuery to find out
     which device driver caused the crash. Please inform us which
     driver caused the crash, not forgetting the version number. Simply
     type in 'NSDQuery CHECKALL'. Please try to send us a copy of the
     driver itself too. NSDPatch will allow you to edit the device
     driver without restricting its functionality so that it no longer
     causes crashes.

     Please turn on 'DEBUG' in the MakeCD tooltypes and send us the
     output generated by MakeCD leading up to the crash.

     If you are unable to adjust the device using the device selection
     window, activate the MakeCD program icon, select "Information" from
     the Workbench menu, and edit the tooltypes by hand. Set
     'WRITE_DEVICE', 'WRITE_UNIT', 'WRITE_DRIVER', 'READ_DEVICE',
     'READ_UNIT' and 'READ_DRIVER' as required.  The extension
     '.driver' must not be declared for the '#?_DRIVER' tooltypes.

Question (Parallel Read/Write):
     What is the difference between sequential and parallel read/write?
     Which should I use?

Answer:
     MakeCD 1.0 always uses the parallel method: two independent
     processes write and read simultaneously. In sequential mode,
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buffers of the same size are read and written alternatively.

The parallel method places higher reliability demands. It only works well if disconnect is properly supported and is turned on for the burner.

The sequential method can avoid possible errors in the controller, but has the following disadvantage: the next write process cannot begin if the preceding read process is delayed, even if the buffer is not empty. i. e. the buffer cannot compensate short-term fluctuations in the read performance.

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Glossary
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Access Time
The "access time" is the time required to access a certain piece of information. For CD-ROM and hard drives, the maximum access time is the time it takes for the read head to move from one end of the drive to the other end in order to read data from the latter position.

AIFF
"AIFF" stands for "Audio Interchange File Format". Created by Apple as a standard file format for saving sound files of any type.

Barcode
A "Barcode" is a unique code for a CD. This number is often printed in the clear inner ring of the CD-R. Some CD writers can read this information digitally. But MakeCD doesn’t report it yet.

Block
In CD terminology, a "block" corresponds to a "sector". See "sector".

Blue Book
The "Blue Book" describes the details of the "CD Extra" format.

Bug Report
Almost all large programs contain bugs. The complexity of programs makes it almost impossible to write error-free code. Should you discover bugs in MakeCD, please send in a "bug report". Please describe the bug as accurately as possible, including a "recipe" for reproducing the error. Be sure to document the exact version number of MakeCD that you are using. Also, please state your precise system details.

Caddy
A "caddy" is a cover for CDs used by some CD-ROM drives or CD writers. The caddy is usually made of plastic or metal and you insert the caddy directly into the drive, the idea being to reduce the scratching of CDs -- this only works in practice if each CD

has its own caddy. Caddies are of no use if you use a tray-loaded drive.

CD
A "CD" is a storage medium that can save information. Think of a CD as a write-protected floppy disk with a massive storage capacity. Whereas floppy disks and hard drives normally use the AMIGA Filing System (OFS or FFS), CDs use a format known as ISO 9660. ISO 9660 is extremely popular -- files on ISO 9660 CDs can be read on almost any computer system.

CD-DA
"CD-DA" stands for "Compact Disc Digital Audio". Philips and Sony introduced CD-DA in October 1982, making it possible to record and save music digitally. The "compact disc" ("CD") was introduced along with CD-DA -- for details see "Red Book".

CD Extra
"CD Extra" is a "Multisession" CD that contains some audio tracks in its first session followed by a data track in the second session. See "Enhanced Music CD".

CD-i
"CD-i" stands for "Compact Disc Interactive", a CD format and computer system developed by Philips for interactive multimedia applications (realtime animations, video and sound). The CD-i format is defined in the "Green Book".

CD Plus
See "Enhanced Music CD".

CD-R
"CD-R" stands for CD Recordable which means that the CD-R can be written to once. A special laser (in a CD writer) "burns" microscopic holes into the recording layer. These pits can then be read by standard CD-ROM drives and CD players.

A CD-R looks similar to a conventional CD with the exception of a different colour. The bottom, recordable side is usually gold, green or blue in colour. The top, non-recordable side is often covered with some kind of label. Without a label, some people inevitably insert the CD-R upside down.

A CD-R consists of several layers. The bottom layer is made of polycarbonate. It incorporates a preformed track spiral which the laser follows when writing information onto the disc. The layer above the polycarbonate is translucent and consists of recordable material. A reflective layer -- mostly made of gold -- covers this recordable layer. Layers of lacquer and a labelling area make the top side.

The surface above the reflective layer is very thin. This makes CD-Rs quite sensitive to scratches on the top side of the CD. Please bear this in mind when labelling the CD -- avoid using sharp nibs or markers containing solvents. As CD-Rs are more fragile than standard CDs, extra care should be taken in their storage and handling.

CD-ROM
"CD-ROM" stands for "Compact Disc-Read Only Memory". This is a CD based on a standard for saving digital data to a CD. In contrast to CD-DA, less data is saved on the CD-ROM. The seemingly unused space is actually used for error correction codes. This coding is extremely important for data reliability. Provided that the damage is not too severe, the data may be restored because of the error correction code.

CD-ROM Drive
A "CD-ROM drive" is a device that can be attached to a computer to allow CD-ROMs to be read or played. In order to play music CDs, you normally require amplified speakers or headphones -- these are usually attached to the CD-ROM drive rather than to the computer itself.

CD-ROM Image
CD-ROMs, as well as floppy disks, hard disks or individual partitions, can be written as a single file. In the case of a CD-ROM, the image file is created by writing all the blocks to the file, beginning at block 0 and ending with the highest block number. This file then contains the "Image of a volume". When the file is written back to a CD-R, a CD-ROM is created which contains exactly the same data as the original CD-ROM. In principle, the CD-ROM has been copied.

If you want to save data from a hard drive to a CD, you cannot simply save the image of the hard drive to the CD-R. Instead you must use MakeCD to create an image derived from the directory or directories -- this image can then be written to the CD-R.

CD-ROM-XA
The "XA" in "CD-ROM-XA" stands for "Extended Architecture". CD-ROM-XA is an extension of the "Yellow Book" standard which is based on the ISO 9660 format. XA tracks can additionally contain audio and video data as found with the "CD-i" system and are suited to multimedia applications. CD-ROM-XA is commonly used for photo CDs and sometimes found with game CDs.

CD-RW
"CD-RW" stands for Compact Disc ReWritable. This type of compact disc can be written to up to 1000 times.

CD-WO
The "WO" in "CD-WO" stands for "Write Once". See "CD-R".

Coaster
A "coaster" is a damaged CD-R(W). Coasters are totally useless.

Coffee Break
A coffee break is the amount of time a program requires to do a particular task in the background. The idea is that you go and have a cup of coffee while the task is running. Sometimes you'll barely have time to get to the kettle, another time you'll be able to bake a cake to go with the coffee...

My sincere apologies to those of you familiar with "Meeting Pearls III" who thought "coffee break" meant one cup of coffee. ;-)

Compact Disc
See "CD".

DAE
"DAE" stands for "Digital Audio Extraction". Audio data is read from a music CD and is passed on to the computer. The audio data can then be processed by the computer. Please note: not all CD-ROM drives support "DAE"!

DAO (Disc-At-Once)
"DAO" stands for "Disc-At-Once". This is a method for burning a CD-R. With "Disc-At-Once", one or several tracks are written directly in one piece (without a pause). The CD-R is fixed once the track or tracks have been written. "Disc-At-Once" enables you to make a 100 percent identical copy of a CD. It also enables you to make music CDs without a pause between tracks. "DAO" is much more difficult to implement than "Track-At-Once".

Device Driver
Your AMIGA uses a "Device Driver" to communicate with devices such as hard drives or CD writers. Among other things, this driver is used to read data from the CD burner or to write data to it. Device drivers use the file suffix '.device'. For example: 'scsi.device', 'dracoscsi.device', 'omniscsi.device', '1230scsi.device', 'gvpscsi.device', 'squirrelscsi.device', 'squirrelserial.device', 'z3scsi.device' etc.

EAN
Siehe "UPC".

ECC
"ECC" stands for "Error Correction Code". This code is principally a rather huge amount of redundant data that is e. g. saved with each sector of data CDs. Read errors from CD-ROM that may occur later may often be corrected using the ECC.

EDC
"EDC" stands for "Error Detection Code". This is a 32-bit value saved in e. g. data tracks for each sector. These bits help to detect errors in the sector data.

Enhanced Music CD
Also called "CD EXTRA" and formerly known as "CD Plus". This is the standard for interactive CDs defined in the Blue Book. These discs consist of two sessions. The first session contains pure audio tracks, the second session is data in a restricted format (normally MPEG pictures). If a CD EXTRA disc is inserted into a standard audio CD player, only the audio tracks are visible.

Green Book
Describes the details of the CD-i format. See "CD-i".

HFS
"HFS" stands for the Hierarchical File System, the standard

Macinstosh file system. HFS does not conform to the ISO standard due to the unique data fork and resource fork structure of Mac files as well as the support for long file names. MakeCD cannot write CD-Rs in the HFS format. There seems little point in adding HFS support, since Macs can read standard ISO 9660 CD-ROMs.

High Sierra Format
The "High Sierra Format" is the file system originally designed for saving data to CD-ROMs. It was short-lived, soon to be superseded by "ISO 9660".

Hybrid
"Hybrid" has two different meanings with regards to CDs:

1. In the "Orange Book", a "hybrid" is a CD-R with one or more sessions saved. However, the CD-R is not fixed -- data can still be written to the CD-R.

2. The word "hybrid" is increasingly used to refer to a CD that contains data in both the "HFS format" and in the "ISO 9660 format". With hybrid CDs, the HSF files are usually visible on the Macintosh, whereas other systems such as the AMIGA see the ISO 9660 files. Some AMIGA file systems can view the HFS files too.

Image File
An "image file" or "virtual image" is a single, usually huge file containing all the data to be written to the CD. The file contains the data in the exact form that will be written to the CD.

Installer Script
To ensure easy installation of all AMIGA programs, a standardized method of installation was developed. A new program is installed using its corresponding ASCII file (installer script) which is processed by the installation program (installer). The installer program offers several installation modes (user levels) based on the knowledge of the user concerning his AMIGA computer system.

ISO 9660
"ISO 9660" is a standard for cross-platform CD-ROMs. Discs created in this format can be read by many operating systems, including Amiga, CD32, Macintosh, MS-DOS, Windows and Unix.

ISO 9660 Amiga
The ISO restrictions are not suitable for the AMIGA. Under the ISO definitions, the filename would require a dot, which means that the AMIGA icon file would contain two dots (as it consists of the filename and the suffix ".info"). However, two dots do not comply with the ISO restrictions... So it is common practise for Amiga users to discard the restrictions and use filenames at will. Thus, MakeCD offers an option called "ISO 9660m Amiga" which uses the filenames as stored on your hard disk.

ISRC
"ISRC" stands for "International Standard Recording Code". Some CD writers feature the option to save this ISRC for each audio track.

The ISRC is made up of the "Country Code" (2 ASCII characters), the "Owner Code" (3 ASCII characters), the year of recording (2 digits) and the serial number (5 digits).

Joliet
The Microsoft "Joliet" File System is an expansion of the ISO 9660 standard and was designed to overcome the filename restrictions of "ISO 9660". Joliet permits long filenames and filenames containing characters from international character sets, e. g. Chinese characters, using Unicode.

Lead-in
The "Lead-In" is the area at the start of every session on a CD-R. The lead-in remains empty until the session or the CD-R is fixed. During fixing, the table of contents (TOC) is written to the lead-in. The lead-in occupies 4500 sectors, which equates to a minute or about 9MB. The Lead-In of the last session also contains information on whether the CD-R is fixed.

Lead-out
The area at the end of a session is referred to as the "lead-out". The lead-out simply marks out the end of the session. The lead-out for the first session requires 6750 sectors, which is one-and-a-half minutes or about 13MB. Lead-outs for the subsequent sessions take up less space: 2250 seconds, which is half a minute or about 4MB.

Meeting Pearls
"Meeting Pearls" is Germany's favourite AMIGA CD series. Meeting Pearls offer best value for your money as its creators do not demand any payment for their work (1). You only pay for production and distribution. So it's well worth a look. If you have internet access, you can access the Meeting Pearls homepage at: 'http://www.core.de/mp/'

Mixed Mode CD
A "Mixed Mode CD" is a CD containing a data track as well as audio tracks. The data track is the first track on the CD. It is then followed by one or more audio tracks.

mkisofs
A program from the unix community used to create "CD-ROM images".

Multisession
"Multisession" means that a CD consists of information (data) written in multiple sessions, each recorded at a different time. The sessions are linked together in such a way that only one logical device appears when the CD is mounted. Most CD writers can record this type of CD, and most CD-ROM drives can read them.

Multivolume
"Multivolume" is closely related to "Multisession". "Multivolume" means that a CD consists of multiple sessions, each recorded at a different time. However, unlike "Multisession" CDs, all the sessions are completely independent of one another so that when the CD is mounted each session appears as an individual logical name. Most CD writers can record this type of CD, and most CD-ROM drives

can read them.

On-the-fly
When writing a CD-R "On-the-fly", no image file (virtual image) has been created in advance. Instead, the CD recording software compiles the data in real-time from a source drive for the actual writing process and sends it immediately to the CD writer without the use of an image file.

OPC Area
"OPC Area" stands for "Optimum Calibration Area". This is a special area on the CD-R, close to the inner edge.

A CD writer needs to test the CD-R material before burning a track in order to establish the optimum strength for the laser beam. The testing takes place in the OPA, which allows for up to 99 tests.

Orange Book
"Orange Book" describes the details of the CD-R (recordable compact disc) standard developed by Sony and Philips. See "Session", "Hybrid" and "PhotoCD".

Packet Writing
"Track-at-once" has a maximum of 99 tracks per CD. "Packet Writing" is a special method allowing several writes per track with minimal overhead (7 blocks per write) and interruption in between. However, not all CD-ROM drives can read CD-Rs created using this method.

PCA
The "PCA" or "Power Calibration Area" is an area towards the centre of the disc used for fine-tuning the laser.

PhotoCD
"PhotoCD" is a standard based on the "CD-ROM XA", "ISO 9660" and Hybrid specifications in the "Orange Book". It allows photos to be saved to a CD-R.

PMA
The "PMA" or "Program Memory Area" is an area on the CD-R containing details of where the individual tracks start and end. The PMA is used by CD writers only. Some of this data is written to the "lead-in" of the current session when the session or the CD-R is fixed. This is to enable normal CD-ROM drives to find the tracks. MakeCD always tries to read in the PMA if you are using a CD writer. This is because the PMA, in contrast to the "Lead-In", contains the exact length of the tracks.

PostGap
The "PostGap" is 75 sectors in size and must be written after a track when the following track is of a different type (e. g. data/audio).

PreGap
The "PreGap" is an area written before a new track. The PreGap separates the track from the preceding track and also stores further information for certain track types. The PreGap usually

takes up 150 blocks (2 seconds).

Program Icon
: Most programs are accompanied by an icon - a small symbol that is displayed on the 'Workbench' screen. A double-click onto the icon starts the corresponding program. Those icons are referred to as "Program Icons". Please consult your 'Workbench' manual for further information.

Progress Indicator
: The "progress indicator" informs you how much of the process has been completed. The movement of the indicator can be jerky under certain conditions. This is the case if the length for the operation could not be calculated before the process was started. Also, the processor may be overrun so that it simply doesn't have time to redraw the indicator frequently enough.

Red Book
: The "Red Book" describes the details of the original CD-DA (Compact Disc Digital Audio) standard developed by Sony and Philips.

Rock Ridge Extensions
: "Rock Ridge Extensions" were developed for UNIX computers to allow the storage of file attributes not found on MS-DOS machines at that time. Rock Ridge Extensions expand on the ISO-9660 standard.

  Among other things, Rock Ridge supports long, mixed-case filenames. The files can also be read with CD-ROM file systems that do not support Rock Ridge, although the long forms of the filenames will not be shown.

  Angela Schmidt has teamed up with other AMIGA programmers to develop an AMIGA standard which allows AMIGA attributes (protection bits and file comments) to be saved for every single object on the CD-ROM. MakeCD supports these special Rock Ridge extensions.

  We recommend that you use Rock Ridge extensions.

Romeo
: "Romeo" is a file system format which allows filenames of up to 128 characters in length. International characters (Unicode) are not supported.

Run-in/Run-out Blocks
: When the laser is turned on or off, five "run-in" or two "run-out" blocks are written. For technical reasons, these blocks must be written.

SCSI ID Number
: The number of a device attached to a SCSI chain is called the "Unit" or "SCSI ID Number" of that particular drive. So that SCSI devices can communicate together without conflict, each device must have its own unique identification number (its SCSI ID). This is usually a number between 0 and 6, allowing up to 7 devices to be connected on your SCSI chain.

SCSI peripherals will normally have an ID selector on the outside of the case; this will be a display that indicates the current ID number and a push or rotary switch that allows you to change the number. Simply ensure that all the devices in your SCSI chain have different ID numbers. If you cannot see an ID selector, consult your user manual or contact the dealer that supplied your peripheral. The device selection window of MakeCD lists all devices attached to your SCSI chain.

Sector

A sector is the smallest unit that can be written by a CD writer. The number of bytes available in the sector depends on the track type. For data tracks, this value is 2048 bytes; for audio tracks, 2352 bytes. There are 75 sectors to a second. This means that 75 sectors of music data must be written to the CD-R to produce one second of music. A 74-minute CD contains 74*60=4440 seconds or 333000 sectors of audio data.

Session

According to the "Orange Book", a session is a collection of one or more tracks on a CD-R.

An empty CD-R always contains an open session, the first session. At least one track must be written to the session before the session or the CD-R can be fixed.

When a session is fixed, a new session is opened so that further data can be added.

When a CD-R is fixed, a new session is not opened and no further data can be written to the CD-R.

A fixed session always contains one or more tracks. An open session doesn’t necessarily incorporate tracks.

A track cannot span several sessions.

TAO

"TAO" or "Track-At-Once" is the most common way of burning a CD-R. The laser can be stopped after each track. In fact, you can even take the CD-R out of the CD writer! This is not possible with "DAO".

The disadvantage of TAO is that 152 blocks (about 2 seconds) are usually written between tracks. With audio CDs, this leads to a two-second pause between songs.

TOC

The "TOC" ("Table of Contents") contains the number of tracks and the start sectors for each track. This information allows you to jump to tracks. The TOC contains details for fixed sessions or fixed CD-Rs only.

Track

A track is a continuous data area on the CD. With music CDs, each piece of music usually has its own track. This makes it easy to select the title you want to play: all you need to do is enter the

corresponding track number.

When burning a music CD, you should give each title its own track. A music CD typically contains 10 to 20 tracks.

A simple data CD has just one track containing all the files. A multisession or multivolume CD has more than one track with data.

Each session contains one or more tracks. A track cannot span several sessions.

Unit
See "SCSI ID Number".

UPC
"UPC" stands for "Universal Product Code", a.k.a. "EAN". Some CD writers allow you to define a catalogue number (UPC) with 13 digits. The UPC is written to the "TOC".

Video-CD
A "Video-CD" contains full-motion videos or movies with associated audio compressed together using the MPEG-1 standard.

The first track of a "Video-CD" is a data track of XA-type in Mode2/Form2. The ISO 9660 format contains some information about the CD. The next track(s) incorporate the actual movie.

Volume name
The name of a formatted floppy disk or partition is called the "Volume name". For instance, this name is displayed on the 'Workbench' screen. MakeCD offers the option to define a volume name for the ISO 9660 image, provided you are a registered user. However, according to the ISO 9660 specifications Level 1 or 2, only digits, upper case characters and the underscore character may be used.

Yellow Book
The "Yellow Book" describes all the physical parameters for CD-ROMs used as data storage mediums.

---------- Footnotes ----------

(1) although donations are welcome :-)

1.81 MakeCD.guide/MSUPP

Support
****

We try to support MakeCD as best we can. Our preferred support medium is the internet. Written letters take far more time to answer, so if you do have internet access, we implore you to use it.

Answering letters takes a lot of time -- a lot more than writing an

E-mail. Time is the eternal enemy; E-mail receives priority over written
letters, although we will always try to help. Also, if you do not have
internet access, please try to telephone rather than write.

1.82 MakeCD.guide/SUPDT

Updates of MakeCD
==========

MakeCD is still in development. You can find the latest versions of
MakeCD, new drivers for CD-Rs, etc. from our web-pages:
‘http://makecd.core.de/’

You can also obtain the latest version for free (you pay the shipping
costs only) from Katrin Schmidt. This offer is limited to one disk per
order. See Registrationform.

1.83 MakeCD.guide/SMLLS

Mailing lists
==========

There are three different, English-spoken mailing lists for MakeCD:

‘ml-makecd@unix-ag.org’
     For discussions with other users of MakeCD. The authors of MakeCD
     will read this list, too. They can thus answer questions noone
     else possibly could. Sometimes the authors will ask you to
     comment about a new feature etc.

‘ml-makecd-announce@unix-ag.org’
     No discussions, just announcements by the authors. For example, we
     will announce new versions and new drivers on this list.

‘ml-makecd-binaries@unix-ag.org’
     This list delivers all new MakeCD binaries, including new releases
     of MakeCD and new drivers, right to your mailbox. It is useful for
     those who do not have access to ftp servers or homepages on the
     internet and thus usually are unable to download new MakeCD
     archives.

```
To subscribe, send 'SUBSCRIBE <user@host.domain>' to
'<listname>-request@unix-ag.org', where '<listname>' is the name of the
mailing list, e.g. 'ml-makecd-announce'. Don't send requests to the
lists themselves, i.e. don't forget the '-request' in the address! To
subscribe the email address 'user@my.email.address' to the announce
list, send the following message:

     To: ml-makecd-announce-request@unix-ag.org
     Subject: Anything

     SUBSCRIBE user@my.email.address

To unsubscribe, send a similar message, but replace 'SUBSCRIBE' with
'UNSUBSCRIBE'.

Send the following message to get further instructions:

     To: listserv@unix-ag.org
     Subject: Anything

     HELP
```

1.84 MakeCD.guide/MAUTH

```
Authors of MakeCD
*****************

Two people have worked very hard to bring you MakeCD: Patrick Ohly and
Angela Schmidt.

E-Mail to both authors: 'makecd@core.de'

Patrick Ohly
     Patrick programs the GUI, the complete SCSI routines (including all
     drivers for CD writers and CD-ROM drives), and in fact most
     aspects of MakeCD except for the generation of the ISO image.
     Patrick's contact details are:
          Patrick Ohly
          KM104, Kenneth Max Kenzie House
          7 Richmond Place
          Edinburgh EH8 9VE
          Great Britain
          Telefon: ++44/131/6624448/23104 (Please don't expect to be called
                   back if you only get the answering machine. Instead, try
                   again later.)
          E-Mail: patrick@core.de

Angela Schmidt
     Angela programs the routines that generate the ISO image (and
     everything related to ISO images), the bulk of the registration
     window, and the installer-script. She handles the distribution
     archives and writes the manual. Angela's contact details are:
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          Klosterweg 28/I501
```

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E-Mail: angela@core.de

Please carefully read through the instructions and FAQ before trying to contact the authors with your problems. We will no longer answer questions which are covered in the FAQ. Please try to understand that we have limited time -- we are generally not amused if someone approaches us without even having checked the instructions and FAQ. These documents are your first source of help!

If you have problems with your SCSI devices, e. g. everything grinds to a halt, you cannot quit MakeCD, and there is no error report, please contact your retailer. In this case, either your SCSI host adapter or your CD Writer appears to be faulty. Unfortunately, we cannot help you in this case. Another such problem is if your SCSI bus "hangs" while the CD Writer is accessing the SCSI bus.

If on the other hand MakeCD does generate an error report, please contact us. Switch on 'DEBUG' in the MakeCD icon, reproduce the error and send the debug output to Patrick.

Please read the FAQ and compatibility list before contacting your retailer!

Our thanks go to the following people who have translated the catalog file: (the authors of MakeCD do not accept responsibility for translation errors).

Danish
Mark Holm <markh@email.dk>

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Swedish
Fredrik Zetterlund <frallan@canit.se>

1.85 MakeCD.guide/MCRDT

```
Credits
*******

Heinz Wrobel
     · Valuable suggestions for a GUI that is easier to use.
     · English translation of some parts of MakeCD.
     · HWGCTRLscsi
     · makeinfo
     · NSDPatch
     · Hunting up JVC firmware bugs.

HiSoft, UK
     · English translation of parts of the manual
     · Distribution of MakeCD in the UK.

Oberland Computer, Germany
     · Distribution of MakeCD in Germany, Austria and Switzerland.

Sven Hansen
     · English translation of parts of the manual
     · Correction of parts of the English translation of the manual

Larry Patrick
     · English translation of parts of the manual

Dominique Schreckling
Mike Hellers
     · Correction of parts of the English translation of the manual ·
     Translation of some parts of the English manual

Jean-Marc Boursot
     · French translation of catalog file and installer script
     · MagicWB icon
     · Testing with care and very useful suggestions

Eivind Olsen
     · Norwegian translation of catalog file and installer script

Fredrik Zetterlund
     · Swedish translation of catalog file and installer script

Francesco Dipietromaria
     · Italian translation of catalog file and installer script

Horváth Péter
     · Hungarian translation of catalog file (requires
     'util/sys/Magyar.lha') and installer script

Mikko Virtanen
     · Finnish translation of catalog file and installer script
```

Mark Holm
      · Danish Translation of catalog file and installer script

Tim & Korneel
      · Dutch translation of catalog file

Frank Arlt
      · He lent us a JVC XR-W2010 for many weeks

Jesper Tuck
      · He lent us a Matsushita CW-7501

Matthias Supp
      · Great/many bug reports/suggestions
      · He lent us a Yamaha CDR 400

Oliver Kastl
      · Help with questions about SCSI or CD-ROM technology

Francisco Sepulveda
      · Beta testing of the Panasonic driver

Christian Berger
Frank Zündorff
Friedhelm Bunk
Rudi Brand
Jesper Tuck
Klaus Melchior
Magnus Bouvin
Martin Schulze
M. L. Lie
Michael Knoke
Mirko Schäfer
      · Great/many bug reports/suggestions

Lars Eilebrecht
      · MakeCD mailing lists

Michael van Elst
      · CDDA sources

Michael-Wolfgang Hohmann
      · Most of the icons used in the MakeCD distribution.

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