Savage040-060_eng

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COLLABORATORS

	TITLE : Savage040-060_eng		
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REVISION HISTORY

NUMBER	DATE	DESCRIPTION	NAME

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Savage040-060_eng

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```
                              Savage-videodriver for 040-060 Amigas

                  For ShapeShifter Macintosh Emulator

                         Version 2.41



         What's this?
             The driver's description

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         What's the MMU?
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             68040/25Mhz testresults
```

```
                        Opps! I have problems!
                            Click here if you have problems with this driver

                        Used things
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                        Author
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                        Thanks
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                        Copyright&Registration
                            Registration & Copyright
```

Note: This is a special 1x1 8bit only driver (full version) for Amiga Life.

1.2   Required hard&software...

Requires:

Kickstart 3.0+ (for the 4bit modes too!!)

an AGA Amiga for 15bit/8bit and ECS/OCS for 4bit

A turbo/processorcard/processor which contains 68040 or 68060

Tested (and works) with:
Blizzard A1240ERC
Blizzard A1260
Cyberstorm MK II (68040/40)
A4000/6840-25 (standard Commodore CPU card)

ShapShifter3.2 or newer...   (Tested only under 3.5/3.6/3.7)

MUCH Fast memory...

1.3   What's diz?

Sadly the ShapeShifter's internal MMU driver is a bit slow, and the other non MMU ←
    based
drivers slow down the emulation speed, when none (or few) pixels changed since the ←
    last

```
refresh.

So i developed this driver , because with the help of MMU only these lines need to ←
    be
freshen, which changed since the last refresh.  Because this is detected by
hardware-way, you able to try ShapeShifter with refresh rate 1 !
(without big slowdown!!)
```

1.4   Technical description of the MMU

```
                Lets start with the name:
MMU = Memory Management Unit

As you can see its mission to do some things with the memory handling.
(example: write protection, cache inhibit, showing the memory changes, others)

But the AmigaOS (yet) doesn't support the memory handling wit MMU, so the MMU is
doesn't need to be in an Amiga.

Only some applications use it, where its really need: enforcer, VMM, cpu fastrom
option, all UNIX and the LINUX, because almost unable to emulate it via software.
(i can say UNABLE to emulate it via software way)

As you can see the MMU is a memory handling unit, so unable to do other thing to  ←
    do
(example:chunky->planar conversion) Because many people think it from the option  ←
    of the
ShapeShifter called "MMU refresh", how the MMU make the refresh, but its DON'T  ←
    TRUE!

The 68060 after the boot from the 68060.library turn on the mmu, and this driver  ←
    try to
use the default 68060's MMU config.
(The 68040 makes similar, but use the 68040.library)

And when we divide the Macintosh video memory to exam: 4kb size pages, the mmu is  ←
    able
to show how there was a difference in this page, and if yes, then we need only  ←
    convert
this chunk.

Ok that's all about MMU. If you interested by other technical information about  ←
    this
driver then take a look to
                Technical description
                !
```

1.5   The technical description of the Driver (only for experts .... :)

```
                    As i said it at the
                    MMU
                     part, this driver does not other, only convert
the changed parts of the display (which displayed by the MMU) from chunky to  ←
   simple
Amiga planar mode.

This driver works only when the used processor/processordcard uses the following  ←
    MMU
configuratuion:

RootPageTable 16 Megabyte
LevelA PageTable 256 Kbyte
LevelB PageTable 4 Kbyte

(so   if  you  dont  understand  it,  simply  if  your  processorcard  uses  other ←
    MMU
configuration this driver will dont work ;)
```

1.6   What is the difference between the VBLANK and the non VBLANK drivers?

```
As you can detect, here are two different versions from the drivers:
(from the version 2.4)

simply version
and VBLANK version (the filename ending with the VBLANK string)

What is the difference?
In  the non-VBLANK driver you able to set the refresh rate (by using the  ←
   ShapeShifter's
Refresh  Rate  option),  but  the  VBLANK  drivers get the refresh rate from the  ←
   screen
(example  50  times  refresh  per second on PAL mode) which gives you MUCH  ←
   smoother gfx
operations.  (no  flickering  mouse  pointer,  smoother  scrolling  in  games  ←
   like in
Warcraft)  Ofcourse the gfx speed is a bit slower (because of the higher refresh  ←
   rate),
but  this  only  noticable  by  the test programs (because almost all testprograms ←
    draw
single  pixel lines, and this driver convert at least 32 pixels by one conversion) ←
   , but
in  the  most  case  the  smoother  effect  is better. (simply try DOOM or  ←
   Warcraft on
Pal-Lace  screen  at  refresh  rate  1  with  normal  driver, and after with the  ←
   VBLANK
driver...  the VBLANK driver gives better and smoother results)
```

1.7   Configuring the drivers under ShapeShifter

Simply copy the drivers to the directory called "Video Drivers ←
                ", because that is the
default searching path of the external video drivers.

What is the difference between the normal and the VBLANK drivers?
Press
                here
                 to see!

1x1 drivers:
From version 2.1 not limited the resolution of the 1x1 4/8/15bit drivers, and
from version 2.4 you able to set the resolution in all modes up to 1024x1024!

The 15bit driver is usable, when the MACINTOSH display memory requirement is ←
    smaller
than 2048kb.   The memory requirement of the display is easy to calculate: ←
    simply
multiple the display width with the display height and multiply it with 2.

Example:
640x480*2=614400, which is smaller than 2097152, so usable.

The 8bit driver is usable, when the MACINTOSH display memory requirement is ←
    smaller
than 1024kb.   The memory requirement of the display is easy to calculate: ←
    simply
multiple the display width with the display height.

Example:
640x480=307200, which is smaller than 1048576, so usable.

The 4bit driver is usable, when the MACINTOSH display memory is smaller than ←
    512kb,
which is equal in resolutions with the 8 bit driver, because similar 4bit ←
    resolution
needs half of the memory as in the 8bit mode. (i think this is logical..)
The memory requirements of the 4bit mode can calculate at the followings: ←
    multiply the
display widht with the display height, after divide it by 2.

Example:
640x480/2=153600, which is smaller than 524288, so usable.

!IMPORTANT!:
Thats, how the resoultion is able free to set, not means, how you can use any * ←
    stupid*
resolution, and it will works! I maked this option because many people asked ←
    for it.
(i dont able to make guarantee using not recommented resolutions, because its ←
    a MAC
side problem, not the driver's problem!)

Recommented and legal MAC resolutions are the nexts: (whichs usable)
512x384

```
640x480
832x624 (Because  i  dont  know,  how  the  MAC's  support the 800x600 mode,  ←
    because a
PowerMAC 7100 is support only this resolution)

Note:  in  the  8/15  mode you not able to use to use resolution 800x600 (like  ←
    Super72
etc.),  because  of the hardware limitation of the AGA chipset.  (because every  ←
    line of
every bitplane must be quad-longword aligned, this requires for the full 32 bit  ←
    Chipram
access – this is the maximum bandwith mode of the AGA)
So in 8/15 bit modes use a width which is dividable with 64.
(so please use 768x600 or 832x600 instead of 800x600)

Note:of  course  a  workaround  is  possible,  but hard to do (because of the  ←
    continous
bitplane memory allocation, and requires MUCH memory, like the 2x2 driver)

2x2 driver:
Savage040-060_2x2          here the resolution is 640x480 but it will be converted to
                           320x240 – like the Xanth-driver. Recommented for games,  ←
                               and for
                           full screen animations.




Memory requirements:
The first turn off the largest free block option, and set by manual the memory  ←
    size.
The driver's memory requirements:
(the 8bit and 4bit modes are examples)

Savage040-060_8bit (640x480)   856 kb  ( 640x480 = 300kb+256kb MMU page fix+300kb  ←
    dbuff)
Savage040-060_4bit (640x480)   556 kb  ( 640x480 = 150kb+256kb+150kb)

Savage040-060_2x2_8bit         2326 kb  (4096x480 = 1920kb+256kb+150kb)
Savage_640x480_15bit           1488 kb  ( 640x480 = 600kb+256kb+600kb+32kb  ←
    ham8convtab )

Savage040-060_8bit (512x384)   640 kb  ( 512x384 = 192kb+256kb+192kb)
Savage040-060_4bit (512x384)   448 kb  ( 640x480 = 300kb+256kb+300kb)


Sadly (you can see it ...) for the easier handling the MMU page all driver's need  ←
    256kb
more memory than other ways....

I think you discovered it, how the 2x2 mode in the resolution 640x480 need MORE  ←
    memory,
but it have a simply answer.  For the higher speed every line need to be 4kb. (  ←
    because
the pagesize of the mmu is 4kb too)
(sorry  for  it  but in the 68040/68060.library the default pagesize is set to 4kb  ←
    , and
```

its too big for my routines, and because i want to make the highest speed i ←
   maked it
so. sorry again...)

So simply sub these values from the maximal memory and write it to the mac memory. ←
    (if
the mac videoram, or other buffer located in the chip memory the driver will ←
   open a
requester and quit. So sub a little bit more if you want sure to start it!)

But these values are the most bigger values, and its able to start them at ←
   smaller
memory. (about 100-200kb smaller)

At last the
              setting the refresh
               is coming.

1.8   Setting

Because this driver uses MMU, you should first try it with refresh rate 1.
(At the 15bit mode too!!)
This are recommended when changes an area of size about 320x256/frame, and ←
   requires
much CPU power at same time:little screen games, emulators (Hi Louise!), ←
   image
manipulators. Or simply requires much CPU power: like ray-tracers, DTP programs.

But when you can use so program what makes many screen manipulation (ex:games) ←
   then you
should try refresh 2.

For games with biiiig scrolling areas (like Warcraft) i recomment you the ←
   VBLANK
version of the drivers. (these give MUCH more smoother scrolling)

1.9   Test results 68040/40Mhz

Testmachine:
A1200-68040/40 (Blizzard 1240T/ERC) 2MB Chip + 16 MB Fast (my machine)
C=1942 Multisync
200 MB DeviceDisk under ShapeShifter

Software: Hungarian MAC System 7.5, ShapeShifter 3.7

8bit tests:

The resolution was 640x480 8bit, and the used screenmode was Pal-HiresLace.

Testprograms: Speedometer 4.0 (Color Quickdraw/CPU), Offscreen Toys boost (FPS),
Symantec System info (Display test)

```
1.0=Mac Quadra 605 (68040/25Mhz) 8bit mode
100% in the Display test is a Mac Quadra 700/8bit mode (68040/25 Mhz)


Note to all tests: Higher Value = Faster Performance


Driver:          Savage   TurboEVD
Version:          2.41      34.1
Refresh rate:        1         1
--------------------------------
Color Quickdraw:  0.610     0.621
CPU:              1.478     1.476
FPS:                 83        84
Display test:      36.5      36.9


Same as above, but the screenmode is Multiscan:Productivity (640x480) - 61Hz


Driver:          Savage   TurboEVD
Version:          2.41      34.1
Refresh rate:        1         1
--------------------------------
Color Quickdraw:  0.434     0.362
CPU:              1.455     1.448
FPS:                 81        68
Display test:      20.4      16.4




4bit tests:


The resolution was 640x480 4bit, and the used screenmode was Pal-HiresLace.


Testprograms: Speedometer 4.0 (Color Quickdraw/CPU), Offscreen Toys boost (FPS),
Symantec System info (Display test)


1.0=Mac Quadra 605 (68040/25Mhz) 8bit mode
100% in the Display test is a Mac Quadra 700/8bit mode (68040/25 Mhz)


Note to all tests: Higher Value = Faster Performance


Driver:          Savage   TurboEVD
Version:          2.41      34.1
Refresh rate:        1         1
--------------------------------
Color Quickdraw:  0.900     0.916
CPU:              1.482     1.487
FPS:                121       118
Display test:      77.3      87.6


Same as above, but the screenmode is Multiscan:Productivity (640x480) - 61Hz


Driver:          Savage   TurboEVD
Version:          2.41      34.1
Refresh rate:        1         1
--------------------------------
Color Quickdraw:  0.883     0.902
CPU:              1.474     1.473
```

```
FPS:                     114        112
Display test:     73.8        84.3
```

```
15bit tests:

The resolution was 640x480 15bit, and the used screenmode was Pal-HiresLace.

Testprogram: Speedometer 4.0 (Color Quickdraw/CPU)
1.0=Mac Quadra 605 (68040/25Mhz) 15bit mode

Note to all tests: Higher Value = Faster Performance

Driver:          Savage
Version:            2.41
Refresh rate:          1
----------------------
Color Quickdraw:  0.297
CPU:              1.473

Same as above, but the screenmode is Multiscan:Productivity (640x480) - 61Hz

Driver:          Savage
Version:            2.41
Refresh rate:          1
----------------------
Color Quickdraw:  0.235
CPU:              1.451

Note: No testresults for TurboEVD in 15bit mode, because only Savage support the  ←⊃
   15
bit mode.
```

1.10   Test results 68040/25Mhz

```
Testmachine A4000 (standard CPU card) + C=1950 Multisync Monitor
Tests done by Alessandro Gerelli (thanx man!)

Testprogram: Symantec System Info

100 = Mac Quadra 700/8bit mode (68040/25 Mhz) - Higher Value = Faster Performance


640x480 Multiscan (8bit)

         CPU     FPU     Video

2.41    70.1    84.1    11.8


2.41
Vblank  69.8    83.6    7.83
```

```
2.3     70.2    84.1    12.0

2.3
Vblank  71.0    85.0    7.72



768x576 Super72 (8bit)

        CPU     FPU     Video

2.41    69.6    83.5    9.51

2.41
Vblank  69.1    82.8    7.37



And these test are the same but with Kickstart _3.1_

640x480 Multiscan (8bit)

        CPU     FPU     Video

2.41    70.2    84.1    12.0

2.41
Vblank  69.8    83.7    7.69

(nothing noticeable faster with kick 3.1)


640x480 Multiscan (4bit)

        CPU     FPU     Video

2.2     70.9    84.9    31.4

2.3     70.9    84.9    31.3

2.41    70.8    84.9    31.8


640x480 Multiscan (15bit)

        CPU     FPU     Video

2.2     70.2    84.2    3.87

2.41    70.2    84.1    3.79
```

1.11   Test results 68060/60Mhz

Testmachine: A1200-68060/60 Mhz (YEES! 60 MHZ!) 2meg Chip+16meg Fast
(Dark/CDi's Machine)

Software:Mac System7.5 (hungarian) 80 meg hd - ShapeShifter 3.6
(macintosh rom was everywhere in the fast memory - so the faster speed was ←
    everywhere)
Note:only Savage and TurboEVD testvalues here, becoz all other (AGABoost, ←
    AGAEVD)
videodrivers are MUCH more slower... (because Savage and TurboEVD uses MMU)

Note: sorry only the older Savage version (2.2) testresults are here...
(because dont have time to go my friend for the testresults... sorry)

8bit tests:

The resolution was everywhere 640x480 8bit, and the used screenmode was Pal- ←
    HiresLace.

Testprogram: Speedometer 4.0

1.0=Mac Quadra 605 (68040/25Mhz) 8bit mode - Higher Value = Faster Performance

Driver:	Savage	Savage	TurboEVD	TurboEVD
Version:	2.2	2.2	34.1	34.1
Refresh rate:	1	2	1	2
Color Quickdraw:	0.920	1.109	0.889	1.054

Testprogram: OffScreen Toys (Boost) 1.3

All values in FPS (Frame per Second) - Higher Value = Faster Performance

Driver:	Savage	Savage	TurboEVD	TurboEVD
Version:	2.2	2.2	34.1	34.1
Refresh rate:	1	2	1	2
Frame per Second:	135	151	124	142

Testprogram: Symantec System Info

100 = Mac Quadra 700/8bit mode (68040/25 Mhz) - Higher Value = Faster Performance

Driver:	Savage	Savage	TurboEVD	TurboEVD
Version:	2.2	2.2	34.1	34.1
Refresh rate:	1	2	1	2
Display test:	53.5	69.8	48.8	62.9

4bit tests:

The resolution was everywhere 640x480 4bit, and the used screenmode was Pal- ←↪
   HiresLace.

Testprogram: Speedometer 4.0

1.0=Mac Quadra 605 (68040/25Mhz) 4bit mode - Higher Value = Faster Performance

```
Driver:          Savage  TurboEVD
Version:           2.2      34.1
Refresh rate:        1         1
--------------------------------
Color Quickdraw: 1.321     1.326
```

Testprogram: OffScreen Toys (Boost) 1.3

All values in FPS (Frames per Second) - Higher Value = Faster Performance

```
Driver:          Savage  TurboEVD
Version:           2.2      34.1
Refresh rate:        1         1
--------------------------------
Frames per Second: 190       191
```

Testprogram: Symantec System Info

100 = Mac Quadra 700/8bit mode (68040/25 Mhz) - Higher Value = Faster Performance

```
Driver:          Savage  TurboEVD
Version:           2.2      34.1
Refresh rate:        1         1
--------------------------------
Display test:      123       126
```

(wow... TurboEVD 2% Faster than Savage2.2 in 4 bit mode ;)

15 bit tests:

Testprogram: Speedometer 4.0

1.0=Mac Quadra 605 (68040/25Mhz) 15bit mode - Higher Value = Faster Performance

```
Driver:          Savage
Version:           2.2
Refresh rate:        2
----------------------
Color Quickdraw: 0.697
```

Testprogram: OffScreen Toys (Boost) 1.3

All values in FPS (Frame per Second) Higher Value = Faster Performance

```
Driver:          Savage
Version:           2.2
Refresh rate:        2
----------------------
Frame per Second:    -
Note: Offscreen toys NOT run in 15 bit mode... ;)



Testprogram: Symantec System Info

100 = Mac Quadra 700/8bit mode (68040/25 Mhz)  Higher Value = Faster Performance

Driver:          Savage
Version:           2.2
Refresh rate:        2
----------------------
Display test:      19.3
```

1.12 Problems...

```
              Problem:  Some pixels seems to be converted wrongly and some some  ←
                   old pointer
          phases on the screen
Solution: Please turn on the MMU refresh in the ShapeShifter/Graphics


-------------------------------------------------------------------------------- ←



Problem:  This driver wont start, i get only a message:
          "The Selected Macintosh Display etc..."

Solution: If you use the demo version, please select the 4/8/15 bit mode, and the
          resolution 512x384.
          In registered version the driver configuration described in the  ←
             configuring
          part.

-------------------------------------------------------------------------------- ←



Problem:  I got a message: "The Delta buffer or the Macintosh video memory located ←
    in
          the chip memory"

Solution: Please turn off the largest free block option in the ShapeShifter memory
          options and select the memory as described
                here
                -------------------------------------------------------------------------------



Problem:  The driver simply crash on my machine!

Solutions for 040:
          -Make sure, how your CPU uses the MMU with page size 4kb.
```

```
             (if your CPU/CPUCard have extra programs to control it please set it to ←
                 4kb)
            -If you CPU uses other program than setpatch to utilize your CPU, please ←
               try to
             set the MMU pagesize to 4kb.
            -If your CPUCard uses only the setpatch (and you dont get any program/ ←
               disk
             with your card) to detect 68040, please check the followings:
                - have you the 68040.library installed in libs: ?
                  if not, simply copy it from your Workbench disk
                - your setpatch is started during the boot sequence?
                  if not, please put in the Startup-Sequence
                - your setpatch is able to load the 68040.library?
                  if not, please upgrade (look Aminet for setpatch)


Solutions for 060:
            - Please copy the 68040.library and the 68060.library to libs:
            (you got its with yout CPUcard)
            - Please upgrade your Setpatch if needed. (when not load the 68040. ←
               library)


------------------------------------------------------------------------------------ ←



Problem:  The driver works correctly, but the MAC uses funny colors.
          (green/blue colors... not b/w and not standard MAC colors)

Solution: You have pirated/damaged keyfile for ShapeShifter
          Please register the ShapeShifter!
```

1.13 About the author

```
               If you have any problems, suggestion, bug reports then write to:
(send the registration fee here )

snail mail:           László Török (pH03N1x/CDi)
                      H-8900 Zalaegerszeg
                      Cserfa 31.
                      Hungary


phone:                +36 92 310 396 (after 18:00 CET)

E-Mail : phoenix@master.fok.hu   <- preferred
or:      phoenix@fok.hu          (i think equal with the previous..)


or:    torokl@alpha.dfmk.hu     <- work


I think now i have an account on the
               Dark Millennium BBS
                So you can
reach me under user name:  phoenix (Thanks Dark!)


iRC (not so often..) : pH03N1x@iRC (#magyar, #amiga or #amigahu channels)
```

U can check my homepage at (a bit old): http://www.fok.hu/~phoenix
(maybe dont work, becoz the home volume is fucked up...)

As u can see my english knowledge is very limited, and my german is MUCH better...
(ich denke so... ;)

1.14 The support sites

You able to find the new demo versions of this driver on the following sites:
Aminet: misc/emu subdirectory

and

Dark Millennium BBS: (CDi WHQ/Crimson Jihad Distro)

phone: +36 93 320 679

HW: A1200-68060/60 18 meg ram 1.7GHD 8xCD-ROM 28.8k
open: every day: 22.00-06.00 (CET)

Sysop: Dark/CDi

1.15 Revision history

2.00 (20.07.96) First version for 060

2.1   Works on 68040 too (the 2.0 is worked too, but i got many ←
   questions, so
                i added the 040 to its name)
                Better memory allocation (all important address now on 32 bit ←
                    address)
                At least 5% faster drivers (1x1 4/8 bit only)
                1x1 8/4 bit modes free resolution selection (up to 832x624)
                No more 2 minutes time limit in the demo version, only resolution ←
                    limit
                (8bit and 512x384)
                New version string handling (very important ;)
                (released only for beta testing)

2.2 (01.12.96) New c2p for 1x1 8 bit modes (now again Savage is the fastest ←
   driver for
                040/060 and for Savage030 030 too ;) thanx the new c2p to: EFT/ ←
                    Impulse
                and Zak/The Forcers Team (and i speeded it up again ;)
                30-40% speed increase in the 1x1 8bit mode (now Savage2.2 at least ←
                    10%
                faster than TurboEVD)
                Some optimizations in all the other drivers (little speed up)

2.3   Single file version (4/8/15 bit drivers in one file)

```
                    Free resolution selection in 15bit mode
                    Faster 15bit drivers (about 5-10%)
                    All 1x1 modes can handle up to the resolution 1024x1024
                    (released only for testing)

2.4 (21.04.97)  VBLANK Versions - MUCH more smoother refresh, and no more windoze  ←
    like
                    pointer moving on mac side
                    (released only for testing)

2.41 (25.04.97) About 5-10% faster 4bit drivers
                    Major speed increase in the 2x2 driver (up to 25%!)
                    New demo concept: 4/8/15 bit 512x384 normal, and 640x480 8 bit  ←
                        VBLANK
                    versions
```

1.16 To do list:

```
24 bit version  (for 030 is ready, dont so hard work to do it for 040-060 too)
256color->64Color (like AGABoost) for faster 8bit in multiscan modes.
```

1.17 Used hard & software

```
Hardware:

To version 2.2:
A1200-68060/60 (Blizzard1260) 2MB Chip + 16 MB Fast  <- Dark Milennium server ;)
(68030/50 - my machine)

From version 2.3:
A1200-68040/40 (Blizzard 1240T/ERC) 2MB Chip + 16 MB Fast (my machine)

1084s monitor... i changed it to a C=1942 MultiSync (its important... :)
2x80watt audio.... (its MUCH important... :)
Techincs RS-TR 333 Tapedeck
An oldie VIDEOTON RA 6363 Stereo Receiver
Sony MDR CD-250 HeadPhone


Some oldie bullshit coming next... :)

Version 2.0 is developed on CDi meeting (14.07.96-21.07.96 BalatonMária)

Most important peoples:
Toxin/CDi (american section)
Dæ®k/CDi&C^J (the very tall dude)
DarkSide/CDi (kübli colourer)
CaveM@N/CDi (the foundator of the logical coder section)
G®æ$$/CDi (Slamtilt tester/graphician)
Flex/Frame18 & CDi (who heared the CDs & kübli tracer)
Józsi/CDi (arrghh... pC section.... & transporter )
```

And me: pH03N1x/CDi

Used things on the meeting:
Food: 30 piece of luncheon meat
         15 piece of egg
         12 kg of bread
         40 Liter Cola/Fanta etc.
         Milk, Paprika, Tomato
         20 kg peach (from the nearest peachtree)
         Some alcohol.... (hukkkk...)

Trash: around 30kg trash
         2 telefoncards
         1 rentabike (smashed by Flex... -3000Ft 8( )
         210 MegHd partition (Darkside's DH1: virus sux)

         Many Worms+Dogfight party (5 hours of continous Dogfight)
         Looking houndreds demos
         Girl hunting
         Toilette Debugger V1.0
         Mosquito killer V1.0 (one by Flex ..) ;)
         Arabian terrorists on the beach of Balaton ;)
         Theorical SW/HW developing (memory protection & very nice computer design)
         Making an unfinished AVI player (no sound)

Best sayings:
-"Darkside are you sleeping?" - at 2 AM.
-....

-When are we going to bike again? (after Flex had an accident...)

-Who drinked my Coke?
-At the evening it was full!

-This all stored MPEG anim !

-How can i slowing down the MPEG-player? (on 060)

-U fool!

-Darkside open the tap!

-There is a spider! Who has a matchbox? (around 3km far from the meeting place)

-U Sucker!

-Jump jump! - And a german people:
-Alles Klar?

-Fingomcsing!

Others:
Ehh!, Kübli

IIIIIIIIIIIII VEEEEEEEEEERYYYYYYYYY HAAAAAAAAATTTTTTEEEE THHHHHHHHHEEEEEEEEEE
ROOOOOBBBBEEEERRRRTTTT MMIIIIILLLEEEESSS CCCCCCCCCCCCCCCCCDDDDDDDDDDDDDDDDDDDDDDDDDDD!

(I (pH03N1x) have to heard it about 100 times - Flex arrrrgghh)

Software:

Shapeshifter-ExeternalVideodriver manual level2 by Christian Bauer
                          (A very good & usable manual & driverspecification ↩
                              description)

Asm-one 1.29 ..   Around 4 new bugs detected...

MMU Expert 1.32   by F.Bürgel... (oldie but goldie! (from 1991))

HippoPlayer 2.39   need some zax for developing...

D68k 2.0.7   The best resourcer on Amiga (i think better than resource ↩
    6.0)

                          (FULL MMU,FPU,68000-68060 support!)

MPEGA.040FPU   by Stéphane TAVENARD (to enjoy the MP3 files on Amiga)

This file checked with the MacWrite Spelling checker... (From Shape...)

19 Guru (reported by MCP gurureport) (from MMU config error to corrupt memory list ↩
    in
freememen and some illegal instruction so Amiga rulez... ;)

1.18   The author wishes to thanks:

The author wishes to thanks:

Christian Bauer   For the World's best Macintosh emulator, and the
                             awesome external videodriver concept

K-P Koljonen   for Hippoplayer

Psycho@master.fok.hu   for the account,and for the free HDD(almost ↩
    unusable ;)

Pawel Hernik   for AGA-EVD, and for the c2p routine (and 4bit c2p ↩
    too)

                             and for the 15bit->ham8 conversion routines (this ↩
                                is a
                             very fast&good routine!)

Peter McGavin   for the fastest c2p routines on Amiga

Chris Brenner   for FastECS

Michael 'Xanth' Spenner   for the 2x2 version idea

Dennis Arketyd   for the Agaboost driver

```
Aki Laukkanen                       for the TurboEVD driver (yeahh.. it was faster  ↩
   than

                                    Savage2.1 but now try to beat the Savage060 2.2 1 ↩
                                       x1
                                    8bit performance ;)


EFT/Impulse                         for the NEW 040-060 optimized c2p (but i speeded  ↩
   it up
and                                 about 20% ;)
Zak/Forcers Team


Thanx to my beta testers:

68060/60Mhz                         Na most nem hagytalak ki a beta tesztelõk közül :)
(A1200/Blizzard1260)                Hehehe... azértse írom ezt ide angolul...  ↩
   pukkaggyanak
Zsolt Sipos (Dark/CDi)        meg! :)

68040/25Mhz (Amiga4000)
Alessandro Gerelli                  Yeeaahh! thax for the AVId beta testing too!
(a.gerelli@agonet.it)               Now i included your testresults... :)

68060/50 Mhz                        Thanx for the critism and for the VBLANK driver  ↩
   idea!
(A1200/Blizzard1260)
Árpád Miklós (Alan)
(alan@elender.hu)

68040/40Mhz                         Sorry i missed your config in the old docs...
(A4000/Cyberstorm MKII)
Roland Lewis
(Roland_Lewis@o14amiga.demon.co.uk)

68040/40Mhz                         Yeah... thanx for help to get i a 040/40 to!
(A1200/Blizzard1240/40)
Csaba Imre


AND: ALL REGISTERED USERES!

Other greetinx:

Amiga:  Shamen/CDi, Flex/Frame18, Anorganic/Promise, Pogi/Crimson Jihad
        Hanzi/???, Chexum, Gizmo/Frame18, ZAK/The Forcers TEAM, Louise/????,
        Goa/CDi/Faculty, EFT/Impulse, Soldier/Impulse, Chris/Power Team,
        Magic/Amiga Only, Unreal/Faculty

        Louise/????                 A ShapeShifter maniac... ;) (like me...)
        All members of Amiga Only   <- The best Hungarian Amiga-user mag

pC:     Grass/CDi, Basq/Tsi Alive, Trajic/Shock!, Hamster/???, Dada, Dab/Promise  ↩
   PC


Last, but not at least: the Developers of the Amiga and AmigaOS (yes this is a  ↩
   really
OS -okay, have some bugs- , but really fun to develop under it!!)
```

Fuck to all pC-owners who's think how Amiga is a game-machine...

1.19   Legal mush

                        The registration fee is 15DM or 10$USD, (or an equal amount in ←
                            other currency).
If you want to register both my Savage videodriver (030 or the 040/60 version) and ←
    AVId,
then the registration fee is 20-25 DM or 15$USD! (or equal in other curr.)
(instead of 30DM and 20 US$)

Note: AVId is a fast AVI player for AGA/020+ based Amigas click
                here
                 for more info!
Note2: i accept your own programs/keyfiles for registration fee!

If you want to register please send the registration fee to
                my postal address
                 in !CASH!
And after i got the money I'll send you the full version in E-mail uuencoded.
(registration is also possible in snail-mail too, but please add an answer ←
   envelope to
your mail and an errorfree 3.5 DD disk too)

(the postal money transfer is working too, so use it if you like better ;)

The updates are free, when you have E-Mail address!

If you registered please DO NOT spread your version!

Amiga and the AmigOS is registered trademark of Gateway2000 (huh... i need ←
   correct it
in every docs... its to booooooring :((((( )

Macintosh is registered trademark of Apple computer INC.

1.20   AVId - the AVIplayer for Amiga

(at this moment 0.993 beta is available, a demo on aminet:gfx/show/AVId.lha)

AVId (0.993b) features:

Requires: 68020+
          AGA Chipset and OS 3.0+
          (maybe will be a 16 gray ECS support too... not sure..)
Recommented: 68030/50 or faster with 0.5 Mb of free FastRam
             (for 240x180 CVID 15 FPS playback needs 68040/25 at least)

Supported video encoders:
Miscrosoft RGB   (RGB) 8/16 bit
Microsoft Video1 (CRAM) 8/16 bit

```
Radius CinePak   (CVID)   24 bit


Supported audio:
PCM mono 8 bit
PCM mono/stereo 16 bit


Features:
Async I/O
FULL in Assembly language coded decrunchers (at moment more than 93kb of Source  ←
    code)
Fast c2p
256 color for 8 bit AVIs
256 gray/HAM8 for 16/24 bit AVIs
18bit mode for 24 bit AVIs (bugfree ham8)
FAAAASSSSSTTT Playback! (Timer based frame skipping method – like on pC)

The demo version is will play the first 400 frames of the animation, and will be  ←
    there
no 18bit support.
The Full version registration fee is 15DM/10US$ (like Savage)
```