



REVISION AIRWAYS

BOARDING



DESTINATION

AMIGA DEMO



Demoscene Talk

Noname and Dascon
Haujobb & The Deadliners

Amiga 34 in Neuss, 13.10.2019
<http://www.dig-id.de/?p=322>

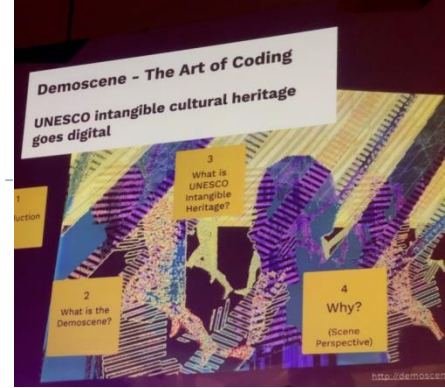
Overview

- ▶ Quick history of the demoscene
- ▶ Amiga Music
- ▶ Cross-Development

Demoscene overview

Demoscene – Some Facts

- ▶ You probably all know some demos
 - ▶ We are not talking tech or game demos here
- ▶ Demoscene is
 - ▶ Uncommercial
 - ▶ NOT unique to the Amiga
 - ▶ Born at the heart of the home computer revolution
 - ▶ Rooted in playful creativity and demonstration of skills
 - ▶ Currently proposed as an UNESCO intangible cultural heritage
 - ▶ A descendant of the cracker scene



Demoscene is Productivity

▶ Games: 4284

▶ * Source: Lemonamiga.com

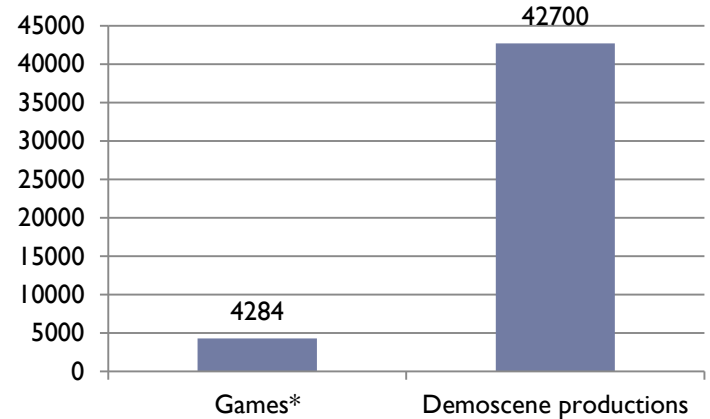
▶ Demoscene Productions: 42700

▶ Source: demozoo.org

▶ No mods and graphics counted

▶ Only Amiga (OCS + AGA + PPC/RTG) categories

▶ That's 1:10!



OCS: 37450
AGA: 5100
PPC/RTG: 150

Distribution Channels

- ▶ Cracking
 - ▶ (Mail-)Swapping
 - ▶ Modem-Trading
 - ▶ Copy-Parties



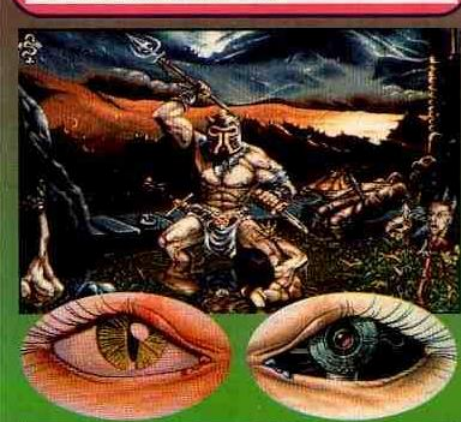
Distribution Channels

- ▶ Cracking
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Distribution Channels

- ▶ Cracking
 - ▶ (Mail-)Swapping
 - ▶ Modem-Trading
 - ▶ Copy-Parties
- ▶ Demos largely same channels
 - ▶ Copy-Party → Demo-Party
- ▶ Went viral through magazines, word-of-mouth, then Internet



Demo Parties

- ▶ My first parties in 1994
 - ▶ World of Commodore (*) / COMA in Cologne, GER
 - ▶ The Party 4 in Herning, DK
- ▶ Be there, socialise, get onto the big screen!



Amiga Demoscene Releases Today

Year	AGA	OCS/ECS*
2017	20	26
2018	10	18
2019	13	18

- ▶ Released mostly at parties, like:
 - ▶ Revision, TRSAC, Demobit, Euskal, Compusphere, Nordlicht, Datastorm, Decrunch, Gerp, Under Construction, Solskogen, Loaderror, Evoke



Remember the Roots

- ▶ **Altair 8800 (1975-77)**

- ▶ Early micro/homecomputer



- ▶ **Micro Soft Basic by Bill Gates, Paul Allen, Monta Davidoff**

- ▶ → „Open Letter to Hobbyists“ by Bill Gates (02/76)
 - ▶ Costs for computing time exceeded \$40.000
 - ▶ Lots of interest, but did not sell too well
 - „[...] most of you steal your software“
 - „Who can afford to do professional work for nothing?“

Homecomputers

- ▶ Jack Tramiel surely noticed this
 - ▶ and paid MS \$25.000 for perpetual licence (!)
- ▶ Used in PET (1977), VIC 20 (1980), C64 (1982), Plus/4 (1984), C128 (1985) & others
 - ▶ Many of us learned some programming there...
- ▶ **Copying became a homecomputer phenomenon**
 - ▶ Copy protections get introduced and broken again
 - ▶ Cracker teams tag their releases with intros and funky music
 - ▶ It really kicked off on the C64 with disk drive



FALLOUT

...THE HOME OF THE REAL CRACKERS

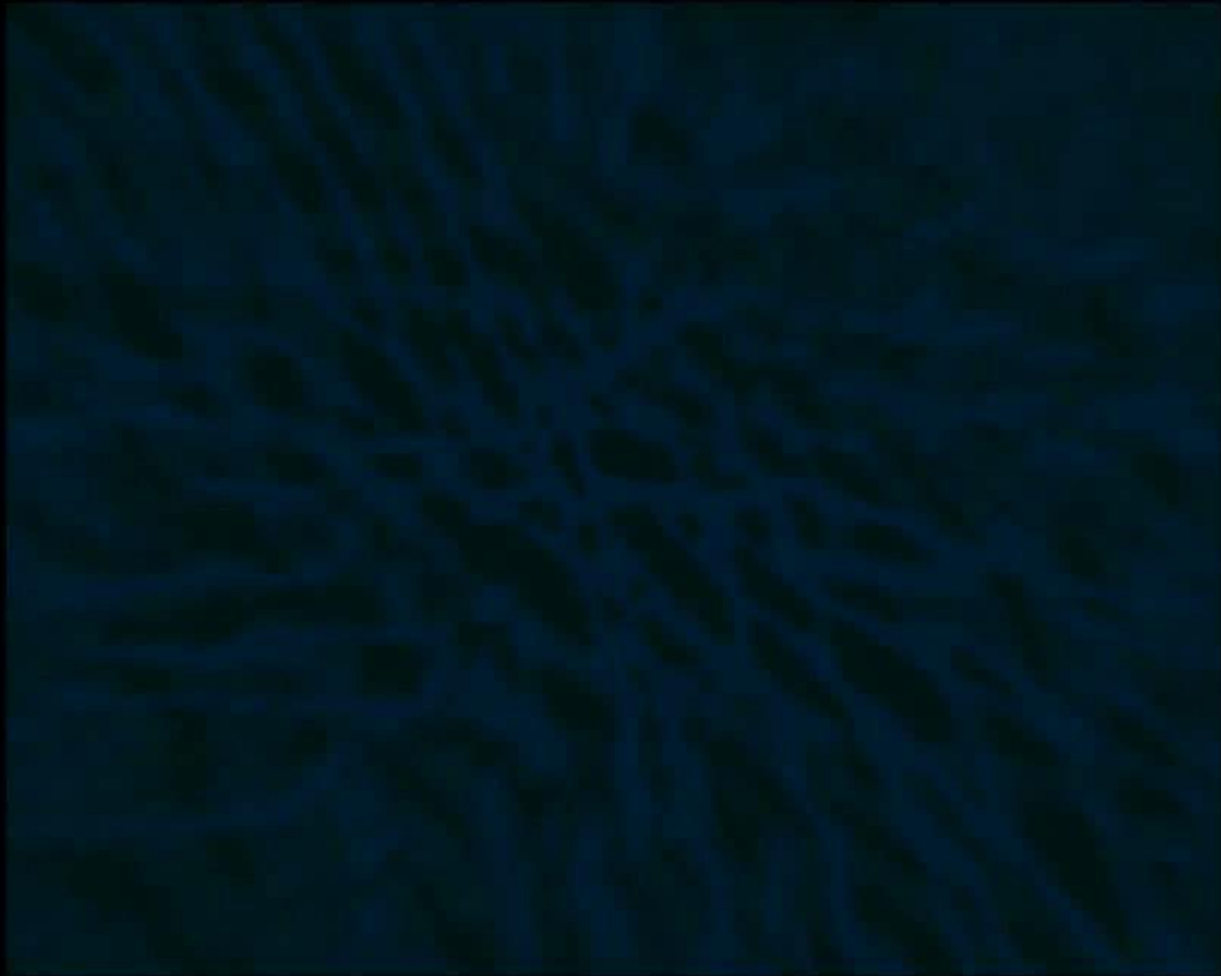
PRESENTS :

COMBAT SCHOOL

CRACKED 21.11.87 BY STRIDER

Gi

INTRO BY WOODO



Video: <https://www.youtube.com/watch?v=iYyo5E9-Fdw>

Enters Amigaaaaaaaaaaaaa!!!!

- ▶ Amiga added sampled sounds
- ▶ In a time that was full of it in pop culture
 - ▶ Kraftwerk did electronic music since 1973
 - ▶ Depeche Mode since 1980
 - ▶ Beat Dis / Bomb the Bass (1987)
- ▶ **The Ultimate Soundtracker 1987**
 - ▶ Many derivatives (Sound/Star/Noisetracker)
 - ▶ Finally Protracker (yay!)



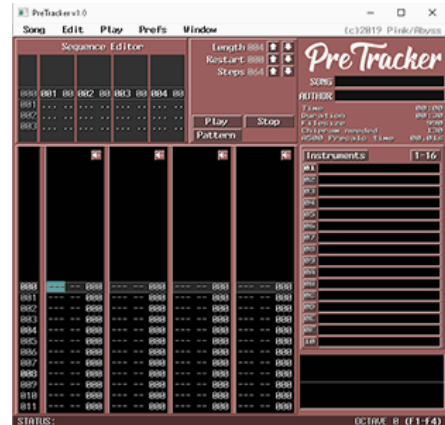
It all started with a Tracker...

- ▶ Sven Väth
- ▶ Michael Münzing / Luca Anzilotti (producers of SNAP!)
- ▶ Raphael Gesqua (*Audiomonster*)
- ▶ Christian Morgenstern aka (*Groo*)
- ▶ Falko Brocksieper (*Rufferto*)
- ▶ Martin Iveson – „Atjazz“ (*Nuke / Spaceman*)
- ▶ Muffler



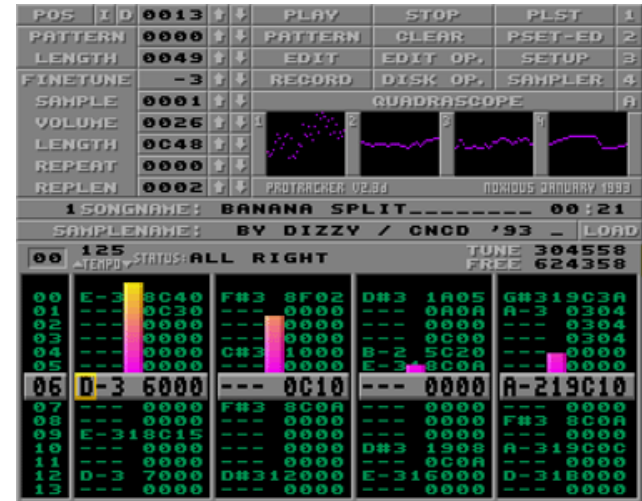
What stuff do we use on Amiga?

- ▶ Common music formats
 - ▶ **MOD.** -> OCS / ECS
 - ▶ **ADPCM / WAV** and **MOD.** -> AGA
- ▶ Other music formats:
 - ▶ AHX (Abyss Highest Experience) –
 - ▶ synth tracker, no samples, small size, very characteristic sounds
 - ▶ PreTracker
 - ▶ was just released in April 2019
 - ▶ crossdev chipmusic tracker



Tracker specs

- ▶ ProTracker 2.3.
 - ▶ THE(!) demoscene tracker.
- ▶ 4 columns, each being a channel
- ▶ 31 samples (8-bit PCM), up to 28.867 kHz sample rate
- ▶ 64 rows
- ▶ Sample size of max 64kb per sample



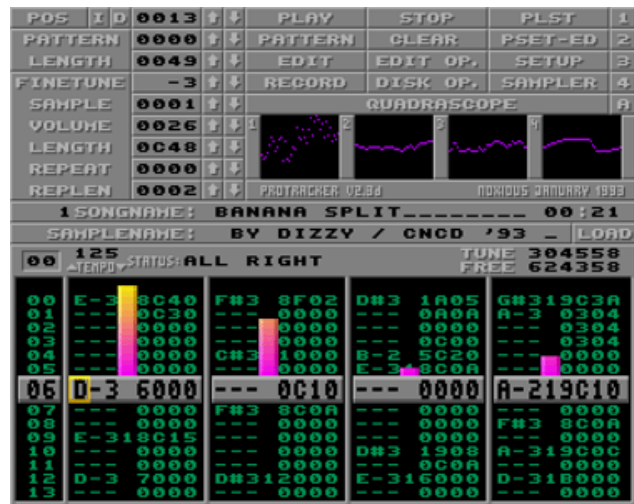
My weapon of choice

- ▶ A track consists of **notes, octave info, sample number** plus (optional) a **3-digit code used for commands**
- ▶ A **track** is replayed on one of the 4 channels (left / right echoing possible)
- ▶ A sequence of 4 tracks is called a **pattern**
- ▶ **Order of patterns** are set and replayed by a time table



Why I fell in love with a tracker?

- ▶ not a musician, only played a bit (lousy) guitar
- ▶ never learned to play keys or piano
- ▶ Tracker opened a new world:
 - ▶ No need to know notes / harmonics.
 - ▶ Just hit a key.
 - ▶ If it sounds odd, erase.
 - ▶ Retry with another one. ;)



ProTracker Command Table

Effect Commands

Effect commands on Protracker should be compatible with almost all other trackers.

0 – None/Arpeggio	8 – *not used*
1 – Portamento up	9 – Sample offset
2 – Portamento down	A – Volume slide
3 – Tone portamento	B – Position jump
4 – Vibrato	C – Set volume
5 – Tone portamento + volume slide	D – Pattern break
6 – Vibrato + volume slide	E – Misc. commands
7 – Tremolo	F – Set speed

E-commands

The E command has several sub-commands...

E0 – Set filter on/off	E8 – <not used>
E1 – Fine pitch slide up	E9 – Retrigger note
E2 – Fine pitch slide down	EA – Fine volume slide up
E3 – Glissando control	EB – Fine volume slide down
E4 – Vibrato control	EC – Note cut
E5 – Set fine tune	ED – Note delay
E6 – Pattern loop	EE – Pattern delay
E7 – Tremolo control	EF – Invert loop

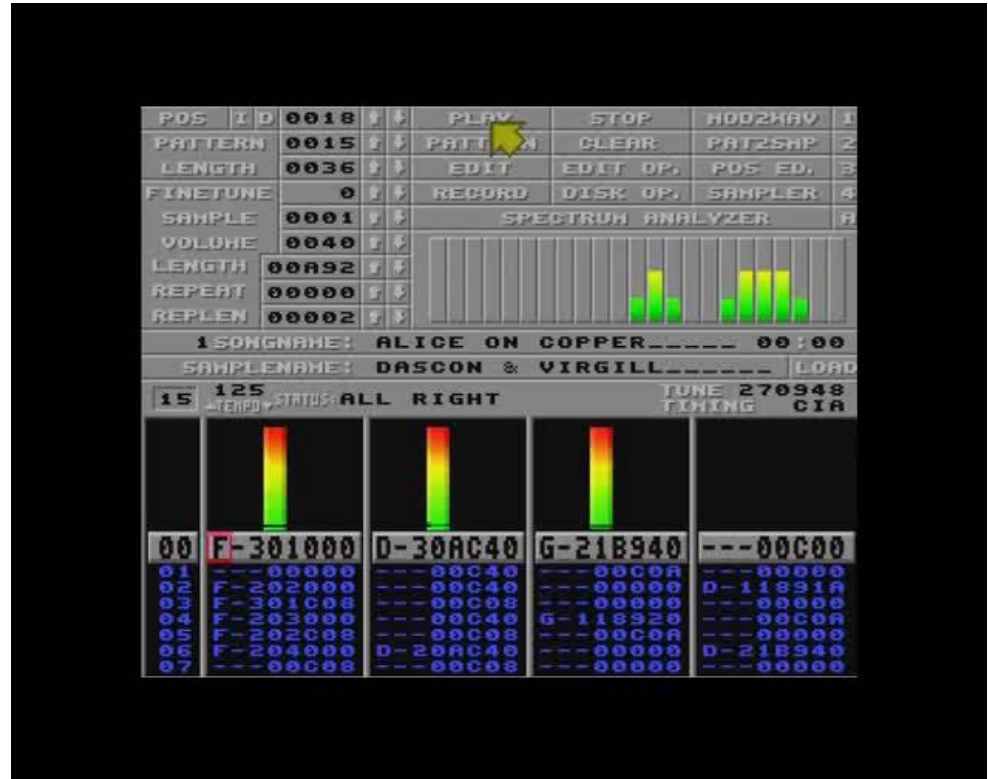
The learning curve

First steps around 1991, the early years...



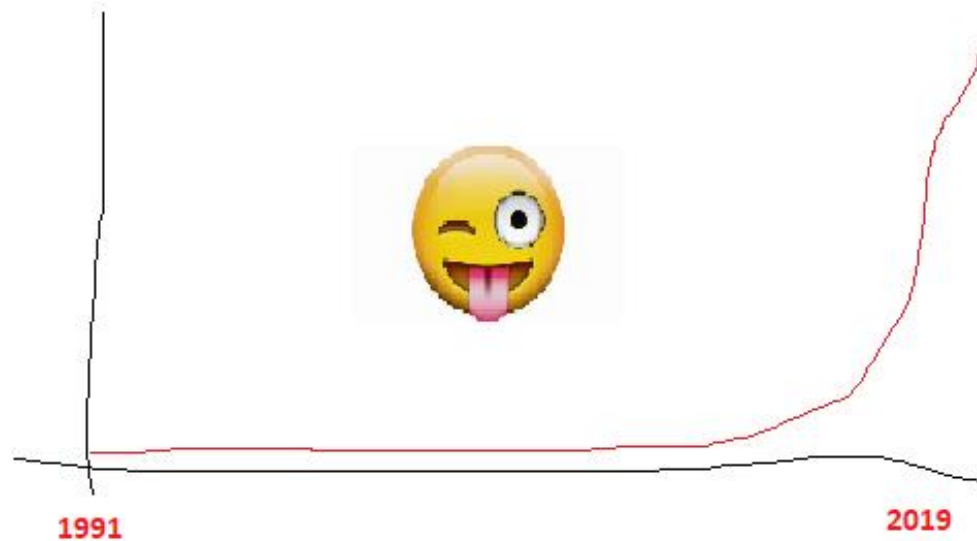
The learning curve

...ridiculous 28 years later...



My personal learning curve

- ▶ Well, come on, what's 28 years...



Power is nothing without control...

- ▶ Limitations = competition
- ▶ Demoscene = competition
- ▶ 4ch = yay!



POS	ID	0009	↑	↓	PLAY	STOP	HDD2HAY	1
PATTERN		0002	↑	↓	PATTEL	CLEAR	PATZSHP	2
LENGTH		0025	↑	↓	EDIT	EDIT OP.	POS ED.	3
FINETUNE		0	↑	↓	RECORD	DISK OP.	SAMPLER	4
SAMPLE		0001	↑	↓	SPECTRUM ANALYZER			
VOLUME		0040	↑	↓	[Spectrum Analyzer Graph]			
LENGTH		008FC	↑	↓				
REPERT		00000	↑	↓				
REPLEN		00002	↑	↓				
1SONGNAME: VIRGILL-GATES								00:03
SAMPLENAME: (C) BY VIRGILL								LOAD
05	125	STATUS: ALL RIGHT				TUNE	53356	
	TEMPD					TIMING	CIA	
44	---	00000	D-	301C10	C#311000	C-	2083F0	
45	---	00000	---	00000	---	00000	---	00000
46	---	00000	D-	304000	---	00000	F-	108C20
47	---	00000	---	00000	---	00000	---	00000
48	---	00000	D-	205000	D#30FA08	E-	208001	
49	---	00000	---	00000	---	00A0F	F-	208320
50	---	00000	D-	302000	C#311C10	---	00000	
51	---	00000	---	00000	---	00000	---	00000
52	---	00000	D-	201000	D#30FC18	---	00000	
53	---	00000	---	00000	---	00A08	---	00000
54	---	00000	D-	302C10	C#311A08	E-	200C20	
55	---	00000	---	00000	---	00A0F	F-	200320
56	---	00000	D-	301000	D-	30C000	---	00000
57	---	00000	---	00000	---	00000	---	00000
58	---	00000	D-	202000	C#311C18	---	00000	

Pattern Art

POS	ID	0068	↑	↓	PLAY	STOP	HDD2HAY	1
PATTERN		0045	↑	↓	PATTERN	CLEAR	PAT25HP	2
LENGTH		0078	↑	↓	EDIT	EDIT OP.	POS ED.	3
FINETUNE		0	↑	↓	RECORD	DISK OP.	SAMPLER	4
SAMPLE		0001	↑	↓	SPECTRUM ANALYZER			A
VOLUME		0040	↑	↓				
LENGTH		01CA0	↑	↓				
REPEAT		00000	↑	↓				
REPLEN		00002	↑	↓				
1 SONGNAME: KEITH_____					00:43			
SAMPLENAME: DASCON&HYGG&BONEFISH__					LOAD			
45	130	STATUS: ALL RIGHT			TUNE 584476			
		TEMPD			TIMING CIA			
54		00000		00000	F#308000	G-30492C		
55		00B44		00D06	---	---		
56		00000		00000	---	---		
57		00B44		00D08	---	---		
58	G#2	5A03	F-2	7905	F#307A02	G-30492C		
59		00B44		00D20	---	---		
60	C#3	C000		00000	---	---		
61		00000		00000	---	---		
62		00220		00000	---	---		
63		00220		00D08	---	---		

It ain't over until the fat **Paula** sings...

- ▶ **Only one (!) time a multichannel tune won the biggest demoscene event nowadays, REVISION demoparty in Saarbrücken / (*it's each Easter, come there!*)**
- ▶ **All other years, including 2019, a 4ch Amiga module won – and did beat multichannel stuff.**
- ▶ **The heritage will be continued.**
 - ▶ **Slimey (Virgills son) was 13 years old, when he did join us in doing music for our latest Amiga demo „De Profundis“**
 - ▶ **So – even if we old guys retire**
 - ▶ **-> there's gonna be more Amigaaaa music!**



Crossdev – it's so easy.

- ▶ **requirements:**
 - ▶ doing Amiga
in the early 90s



(picture shows Virgills room in the 90s)

Crossdev – it's so easy.

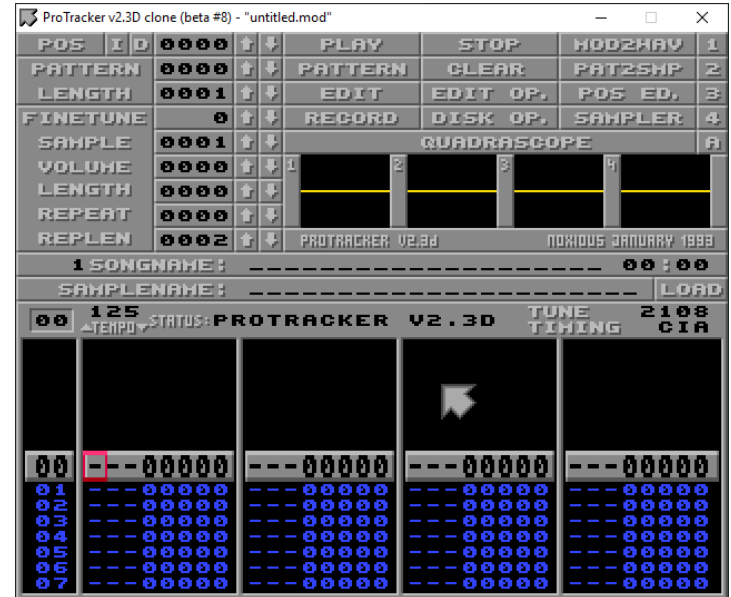
- ▶ **requirements:**
 - ▶ doing Amiga music in 2019



Crossdev – it's so easy.

- ▶ **8bit bubsy ProTracker clone**
 - ▶ **Clone of ProTracker 2.3d done in C**
 - ▶ **Windows / macOS**
 - ▶ **Most accurate PC clone in terms of original replay**

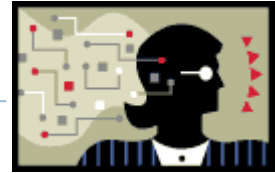
www.16-bits.org



Code Cross-Development

In a Nutshell

Why develop for Amiga on PC?



- ▶ 20 years ago, Amiga was the main machine
 - ▶ Edited in 640x256 (PAL) or 640x400 (Euro72)
 - ▶ Assemble on 68060 with 50 MHz
- ▶ Today, PC is just more productive
 - ▶ Edit in 1920x1080 (Full HD), dual head
 - ▶ Compile on Core i7 with 3200 MHz
- ▶ In essence:
 - ▶ Bigger monitors
 - ▶ Better tools (IDE, debugger)
 - ▶ Faster, i.e. quicker turn-around times



Sorry to burst your bubble



- ▶ Cross-Development ain't a new thing
 - ▶ CBM/MS Basic developed on PDP-10
 - ▶ Original AmigaOS → Sun
 - ▶ AmigaOS 3.1.4 → vamos
 - ▶ Twin World / Blue Byte → Atari
 - ▶ Turrigan / Factor 5 → Pegasus (PC)
 - ▶ Core Design → SNASM (PC)
 - ▶ Demos by TBL, Ephidrena, Elude, The Electronic Knights, Lemon. Haujobb



Holger Schmidt / Factor 5 on Turrigan

Cross-Development Examples



▶ Complete Demos

- ▶ [Planet Rocklobster](#) / Oxyron

▶ Frameworks

- ▶ Lemon. [Winuae Demo Toolchain](#)
- ▶ The Electronic Knights TEKMO
- ▶ Capsule [Tornado Amiga Demo System](#)
- ▶ Abyss [vscode-amiga-debug](#) ([video seminar](#))
- ▶ [Haujobb Amiga Framework](#) ([video seminar](#))

Arranging effects in a Tracker interface with the Rocket editor

Beam Riders / Haujobb & Ghosttown Pattern View in Rocket editor

demo3.rocket — GNU Rocket Editor

File Edit

default	flares(0)	bilinear(1)	blobwire(2)	line(3)	logo(4)	plane(5)	kaleido(6)	endzoom(7)							
time1	y1	z1	x1	particles	mixer	time2	x2	z2	y2	camx	camy	camz			
00159h	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
0015Ah	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
0015Bh	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
0015Ch	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
0015Dh	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
0015Eh	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
0015Fh	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
00160h	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
00161h	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
00162h	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
00163h	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
00164h	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
00165h	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
00166h	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
00167h	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
00168h	---	---	---	---	494.00	---	---	---	10500.00	---	---	---	---	---	---
00169h	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
0016Ah	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
0016Bh	---	-233.00	---	---	---	---	---	---	---	---	---	---	---	---	---
0016Ch	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
0016Dh	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
0016Eh	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
0016Fh	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
00170h	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
00171h	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
00172h	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
00173h	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
00174h	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
00175h	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
00176h	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
00177h	9500.00	-70.00	---	---	---	---	---	---	---	---	---	---	---	---	---
00178h	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
00179h	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---



Demoscene Overview

Slides and links at: <http://www.dig-id.de/?p=322>

