



**CSDb - Quantify Me 2020  
Pandemus**

**By**

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**The scene is on the move, but to where?**

## Introduction

In 2010 I took it upon me to analyse the statistics related to the Commodore Scene Database (CSDb)<sup>5</sup>, to start shedding some light on the dynamics of the scene throughout the years since the introduction of the Commodore 64 in 1982. The CSDb is the principal repository for C64 scene releases and is growing with more and more data, both from the past and the present. I wrote a program that would get key data from the site's pages automatically (called Slurp!) and used SPSS and Excel to further process and analyse the results. I published the first analysis as CSDb - Quantify Me on the 5<sup>th</sup> of August 2010<sup>1,2</sup> with data cut-off of 31<sup>st</sup> of July 2010.

I added some additional findings in the weeks after and observed that after a period of inactivity a new era of relative activity had begun that "matches the one in the Golden Age of the C64 scene" (1985-1995)<sup>3</sup>. This would predict we'd see increased activity in the years to come.

## DUPLUS

When Perff made it possible for me to get the data directly, I would take a look at the current data in the database from time to time, but in January 2019 I wrote another more comprehensive review of the state of the database, called CSDb: Quantify Me 2018 - DUPLUS<sup>4</sup>. A key finding was that we had indeed started a new era of activity as of 2010 and the number of yearly releases were clearly growing again, instead of declining. In addition, 1988 was solidly confirmed to be the golden year of the C64 scene with 16.550 releases (2 releases per hour!).

The generation born in 1974 comprised the average scener and the average age to have a first scene release was 16 years. 70% of sceners were born before 1977.

However, the data also showed that the average age of sceners releasing stuff in recent decades was increasing by year, indicating that the scene is clearly aging. If the scene is to have a sustainable future fresh blood is needed as the old folks retire (or die...). ;-)

Nevertheless, the C64 is still run by highly active old-timers and release more and more productions!

## Pandemus

So, as we have now left the year of the start of the pandemic, and hopefully move into better times, I thought it might be worthwhile to take another look at the current standings. After all, it has been (more than) 10 years since I did the first analysis. *Was I really just 35 years old? What a youngster!* What has the pandemic brought us? Is there any other trend to look out for? Something else striking? Or have I seen it all? In this short document called *CSDb: Quantify Me 2020 - Pandemus* I will again list some figures and tables that might be of interest. **Credits as always to Perff for making available the data for analysis!**

Oh and also always, this data is as good as it gets, we are not dealing with a dataset in a professionally controlled environment. But it is great for playing around with and generate some insights. :)

## **The low-down**

- **1988 is the golden year in the heyday period (1985-1995)**
- **Number of releases in CSDb have doubled since 2010**
- **Slow increase in sceners getting their first credit, new scener appearances dropping recently**
- **2020 set a 25 years record with 2831 new releases**
- **Increase in annual releases since 2010 prophecy is continuing, but increasingly attributable to old groups**
- **1974 is the average year of birth for sceners overall, recent years show a bit younger sceners coming in (1977-1981), trend still aging scene**
- **Prime times for release uploads were 12:00 PM and 7:00 PM**
- **Upload time matters: releases uploaded between 10 PM and 4 AM have a higher chance of getting votes and comments**

## Key Insights

### Compared to 2010 and 2018

Some previous learnings from CSDb already observed in past analyses that haven't changed in the current one:

1. The scene had it's "**heyday**" from **1985-1995**, with **1988** being the "golden" year with the most releases (18861, 2.1 per hour, or *1 release every 30 minutes* that year!). ([Figure 1](#)).
2. Since the 2010 dataset, the number of releases have doubled, but primarily for the first part of the heyday period (until 1989), **not** for the later years. ([Figure 1](#)).
3. We get mixed signals from the scener *Year of first appearance* and *Year of first credit*. Like in DUPLUS there is a **continuing increase in sceners getting their first credit**, but unlike I concluded in 2018, this doesn't necessarily mean they are new sceners. There is a clear decline in sceners making their first appearance. However, I take the positive road. New credits is new activity! ([Figure 11](#)).
4. Mean and median year of birth is **1974** for all listed sceners, [Figure A1](#). The mean and median year of birth is 1975 and 1974 respectively for sceners that released something in 2020 (data not shown). Depending on variable we look at there seem to be a little younger people coming in the recent years ([Figure 12](#), [Figure A3](#)).
5. The increase in releases since 2010 is continuing! As a matter of fact, there were **2831 releases in 2020** (driven by cracks, graphics and music), which is a **record** in the past 20 years, we have to go back to 1995 at the moment to find a year with more releases! ([Figure 2](#), [Figure 4](#), [Figure 6](#)).
6. The scene was primarily established by groups from Germany, Sweden, Denmark, The Netherlands and the United States, Poland and to a lesser extend Hungary were late to the party ([Figure 13](#)).

### New insights and findings

#### Releases

1. Talking about records, **2020** now is listed to have the **highest number of graphic releases** in CSDb, topping 1990. This is primarily caused by the January 2020 Tiny PETSCII Compo ([Figure 5](#)).
2. The number of monthly releases each year is a dynamic figure, as one might expect, but not in **1988**! In terms of percentages, in case of even distribution, each month would contribute 8.3% of annual releases. 1988 came very close to that, with the least months deviating from that 8.3%. A hyperactive year throughout! ([Figure 7](#)). However other years do show a seasonal effect. On average, the months **July** and

**December** contribute more than 9.3% of annual releases, while **January, May** and **June** contribute less than 7.3% of annual releases ([Figure 8](#)).

### Sceners

3. There are **31093** sceners listed in the database and 75% have a country of origin. **One in five** scener is from either **Germany** or from a **Nordic country** ([Figure 9](#)). Zooming in on those that released something in 2020, the list of countries is the same with a few shifts in position ([Figure 10](#)).

### Groups

4. Groups that started in 1991-1995 were represented highest in the list of groups that released something in 2020. A promising trend is the contribution of new groups formed the past decade! ([Figure 14](#)).

5. 230 groups (2.9%) account for **50%** of the total number of these releases ([Figure 15](#)).

6. Regarding productions released between 2001 and 2020, groups formed *during* that period seem to be similar regarding release activity, while groups that formed between 1986 and 2000 seem to have been be a little more active ([Figure 16](#)).

7. When comparing the periods 2001-2020 (20 years), 2011-2020 (10 years) and 2016-2020 (5 years) there is a **notable increase in the mean number of releases** per group per active year ([Figure 17](#))! When zooming in on the years these groups were formed, this increase in release activity is driven by groups that formed before 2006, in particular those that formed between 1991 and 2000 ([Figure 18](#)).

### CSDb historians

8. Taking a look at the awesome sceners that devote their time to complete the CSDb repository we can check the dynamics of this process. After an initial surge since the start of CSDb (**peaking in 2006 to ~17000 releases**) there is a decline to 2011. At that moment apparently new sources have been identified and a steady annual growth is visible. The past three years there are almost **10000** historical releases added annually! ([Figure 19](#))

9. All of these uploads are done at a certain time of day. In terms of CET, **Noon** and **7:00 PM** are the peaks of day, while most uploaders are sleeping at 04:00 AM ([Figure 20](#)).

10. The list of top 10 uploaders of all time is lead by **cba** (who is a constant in this equation) with 16105 uploads, **hedning** (14797) and **r242** (11641) ([Figure 21](#)).

11. Regarding that new source of historical productions added after the decline of 2011, the bulk came clearly from **hedning**, **G-Force**, **Dymo** and **Radd Maxx** ([Figure 22](#)).

### Interaction with CSDb community: upload time matters

12. There is a relationship between the time of upload and the interactions of the community with a release ([Figure 23](#))! The **most commented** releases were done after **11 PM**, the **number of votes** they got following the same pattern. A particular sweat spot seems to be between 3 and 4 AM. Whatever you do, do not upload at 7:00, 10:00 , 15:00 or 17:00 hour. ;-) So if you're on this side of the timezone (CET), better set your clock to around **3:00 in the morning** to upload your latest creation. ;-)

13. In fact, when stratifying a bit, releases uploaded **after 10 PM** have a higher chance of getting **8 or more votes** and **more than 5 comments**, so the ideal period seems to be between **10 PM and 4 AM**. Don't upload between 5 and 6 AM! ([Figure 24](#)).

### Top lists

14. You can take a look at some top lists at the end. It reaffirms **Hotline** as release machine in the heyday period ([Table 4](#)) and shows **Triad** and **Genesis Project** battle for first in terms of all time highest release count ([Table 5](#)).

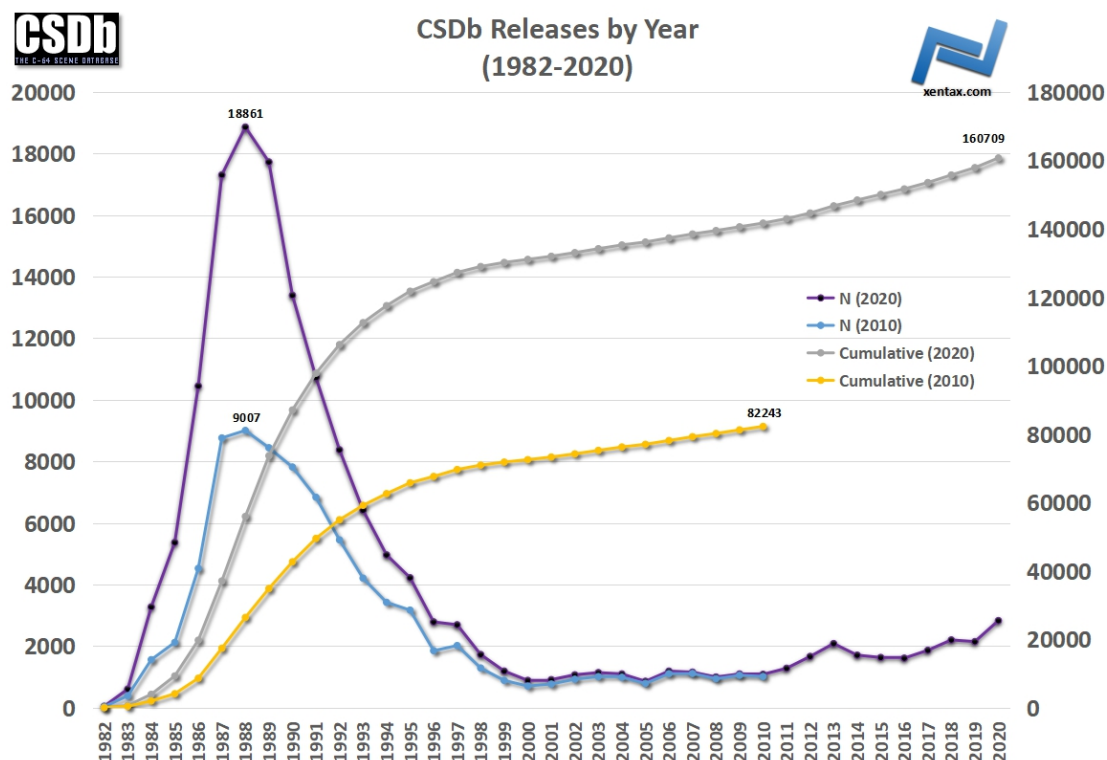
15. In 2020, the top 10 releasing groups (lead by **Excess**) were all more than 20 years old and account for **48%** of releases ([Table 1](#)).

16. In addition, looking at the past 5, 10 and 20 year periods, the **same old groups** drive the releases more and more each shorter period, from **30%** for the past 20 years to **44%** the past 5 years ([Table 2](#)). The number of active groups is also dropping from 992 to 474. This could be indicative of less diversity, less groups, sceners converging to old groups, waning interest, what have you. As we saw in bullet 7, it is these old groups that have become more active, which would be in line with this. Are we seeing a thinning out of scene diversity, people flocking to old groups, old groups ramping up activity, but being the last to stand in a dying scene? Or are we seeing actual continued revitalization of the scene?

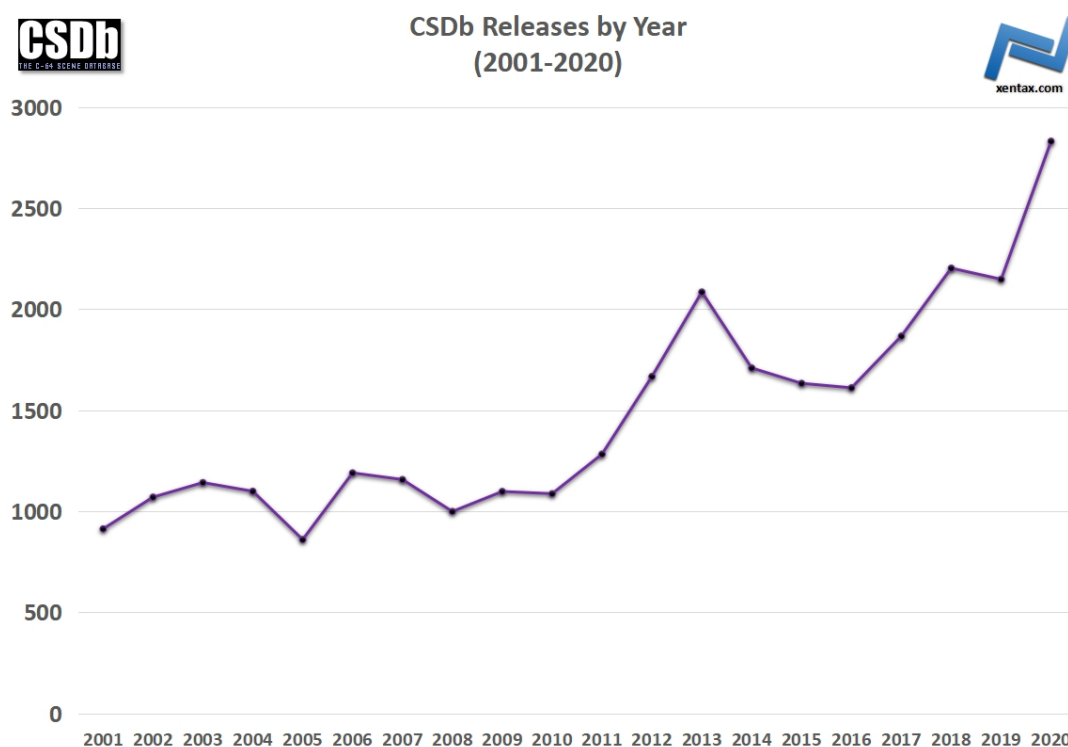
### Appendix

In the [appendix](#) you can find some descriptive number regarding the data used and some left-over figures.

## Key Results



**Figure 1. Total number of releases at CSDb by year of release, July 31<sup>st</sup> 2010 versus 2020 results.** Clearly, since that date in 2010 many more releases have been added to CSDb, It has practically doubled these past 10 years! (Note: CSDb listed 188963 releases, of which 85% had a year of release).



**Figure 2. Total number of releases by year of the last two decades.** Note the increase in releases as was foretold in 2010. ;-) In addition, 2020 is a record year with **2831** releases! We have to go all the way back to **1995** to find a year that is listed to have more releases!



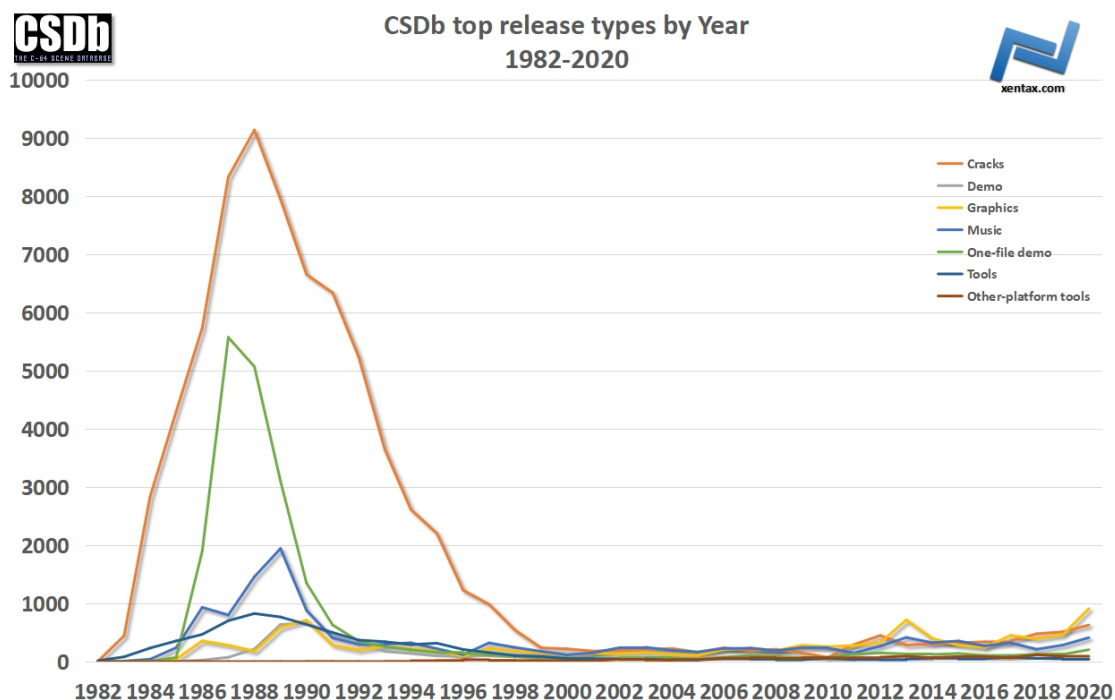


Figure 3. Number of yearly releases stratified by top release types. Nothing we haven't seen before.

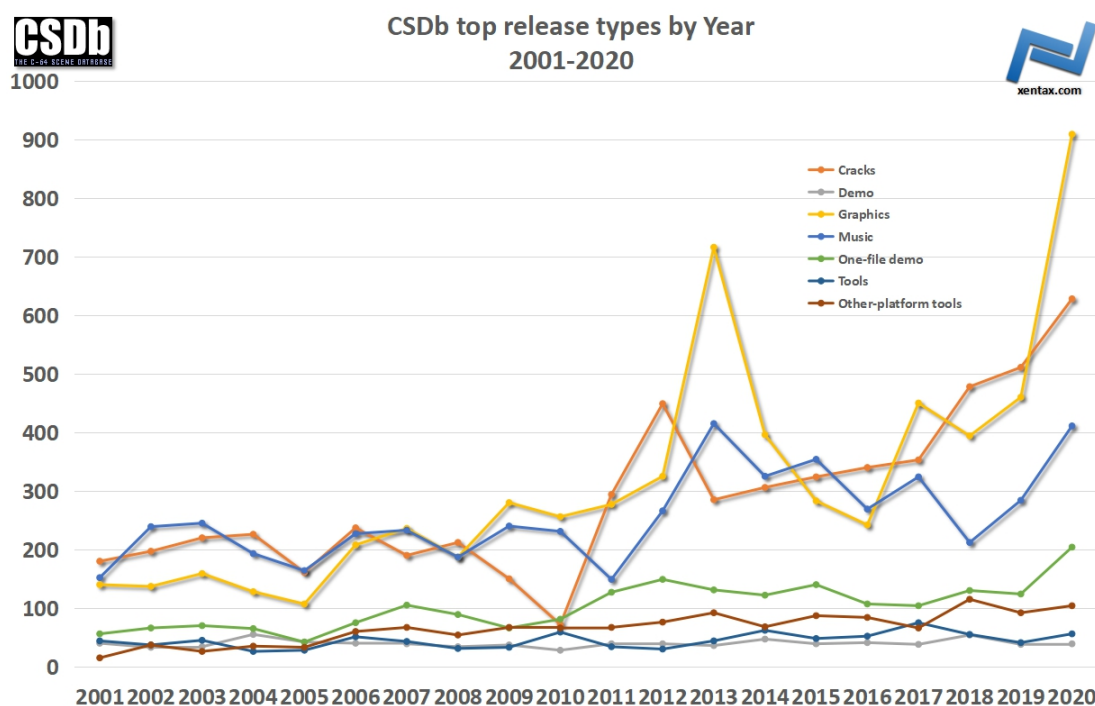
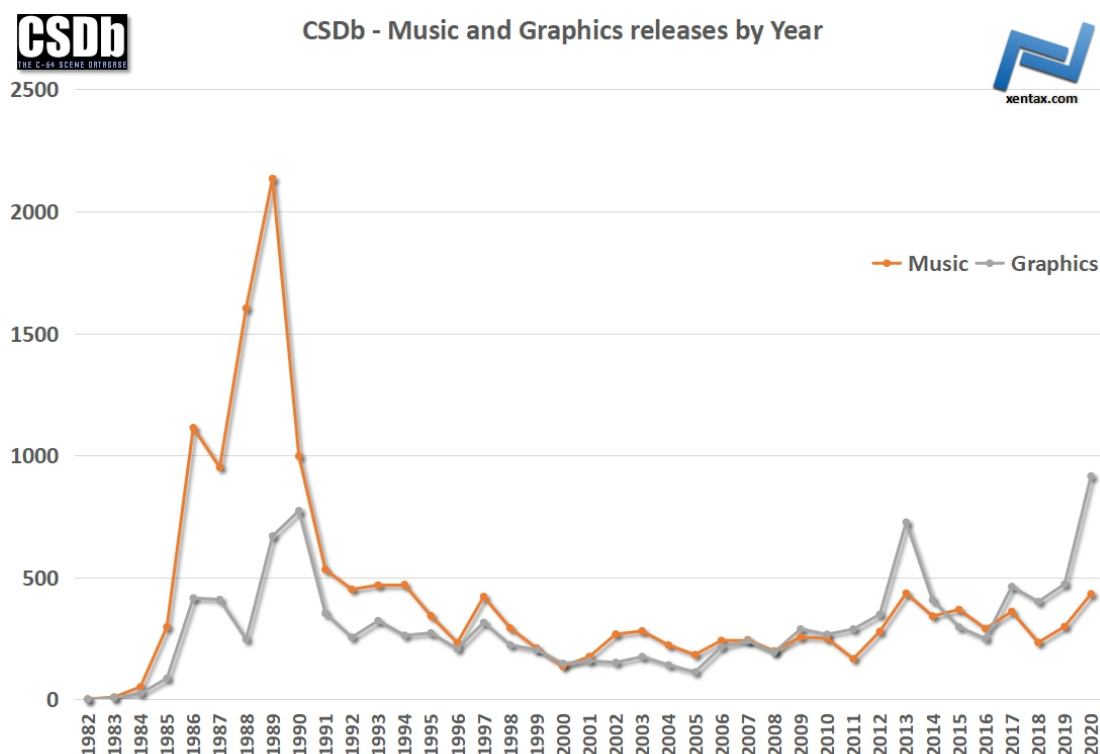
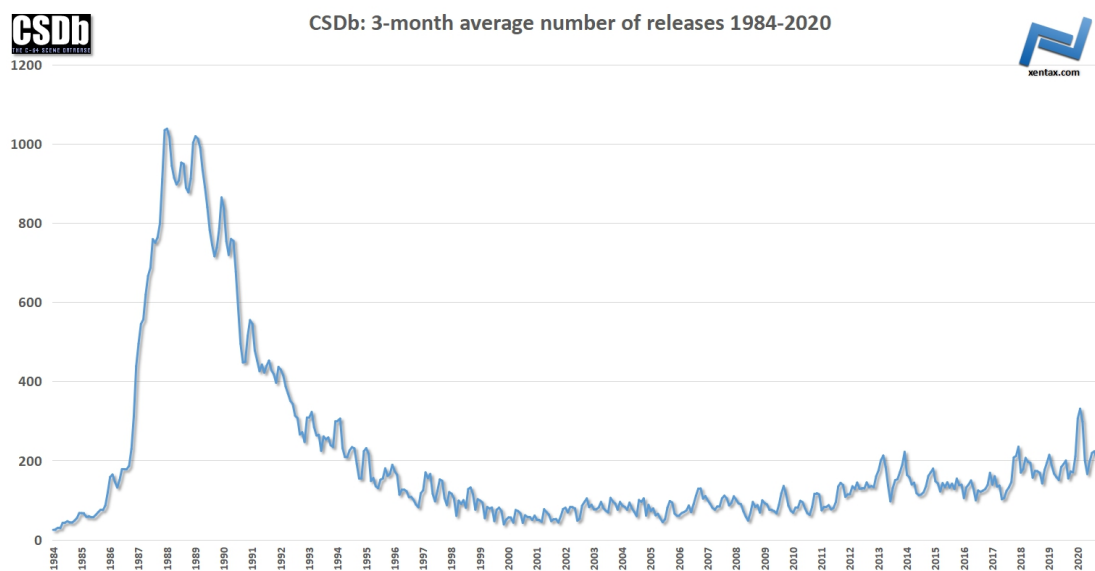


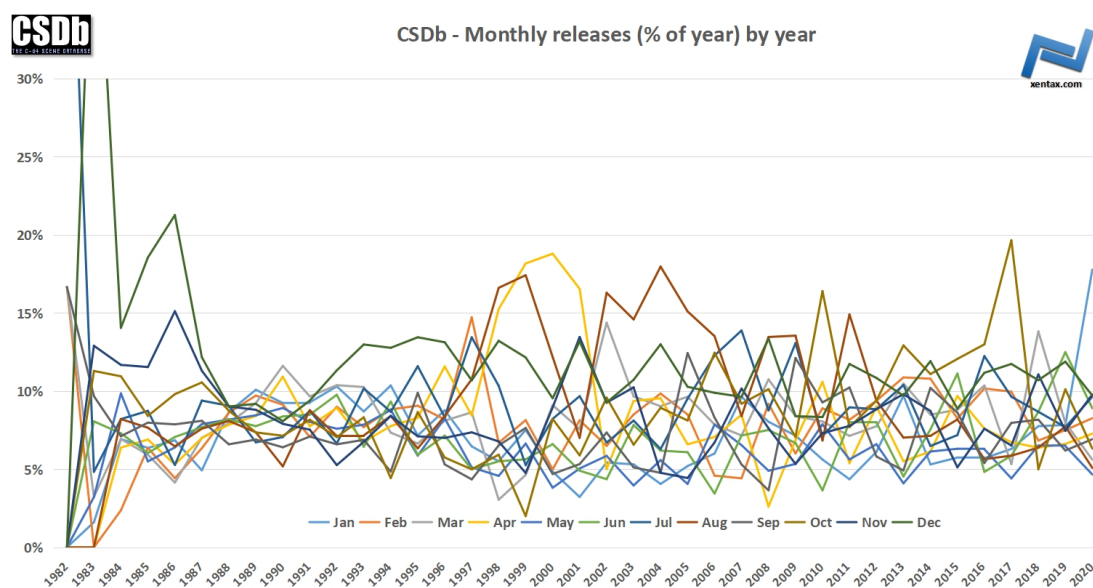
Figure 4. Number of yearly releases the past 20 years, stratified by top release types. On the rise are clearly cracks, graphics and music. If anything, the pandemic seems to have driven creativity. Though it must be said that the graphics again are an outlier, as in 2013, since in January 2020 over 500 releases were listed. This was primarily caused by the **Tiny PETSCII Compo 2020** (about 330!). To be fair then, you might wish to subtract 330 from the 2831 in 2020. Still, 2500 releases is a record in this period, so who cares! :)



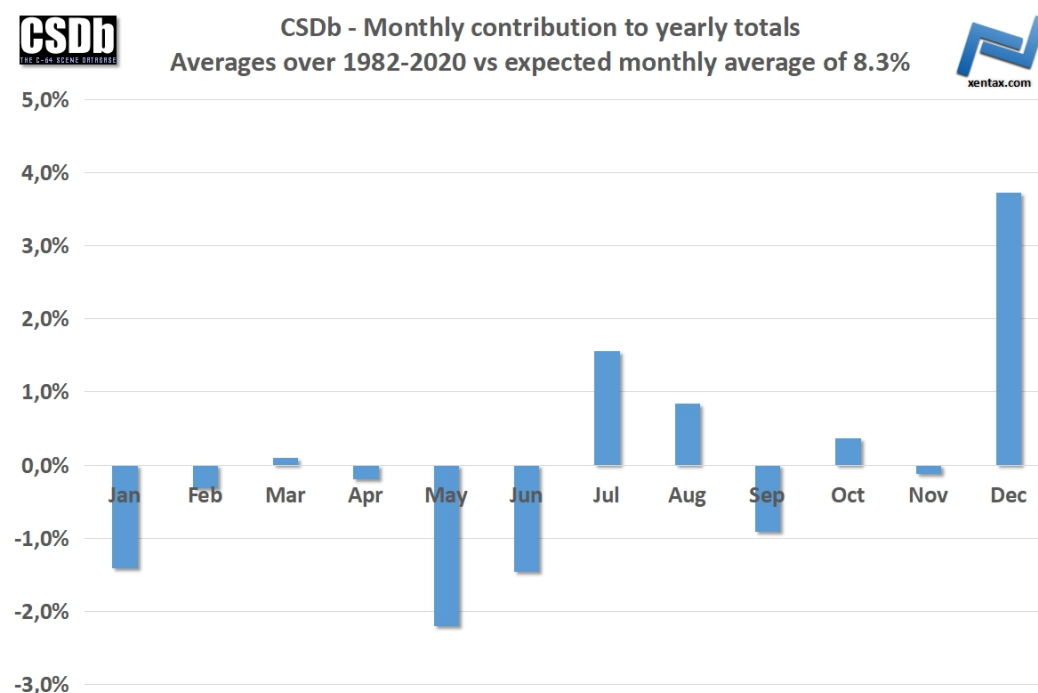
**Figure 5. Music and graphics releases by Year.** This includes standalone music releases (single or collections) and graphics releases (single or collections). Music was obviously very popular in the 1980's, peaking in 1989, but dropping sharply in 1990 and 1991. It certainly is picking up again the past decade, as are graphic releases. The PETSCII compo in January 2020 even pushed the number in 2020 to an annual record for graphics in CSDb. Never before were so many stand-alone graphics released, according to the current state of the database! :)



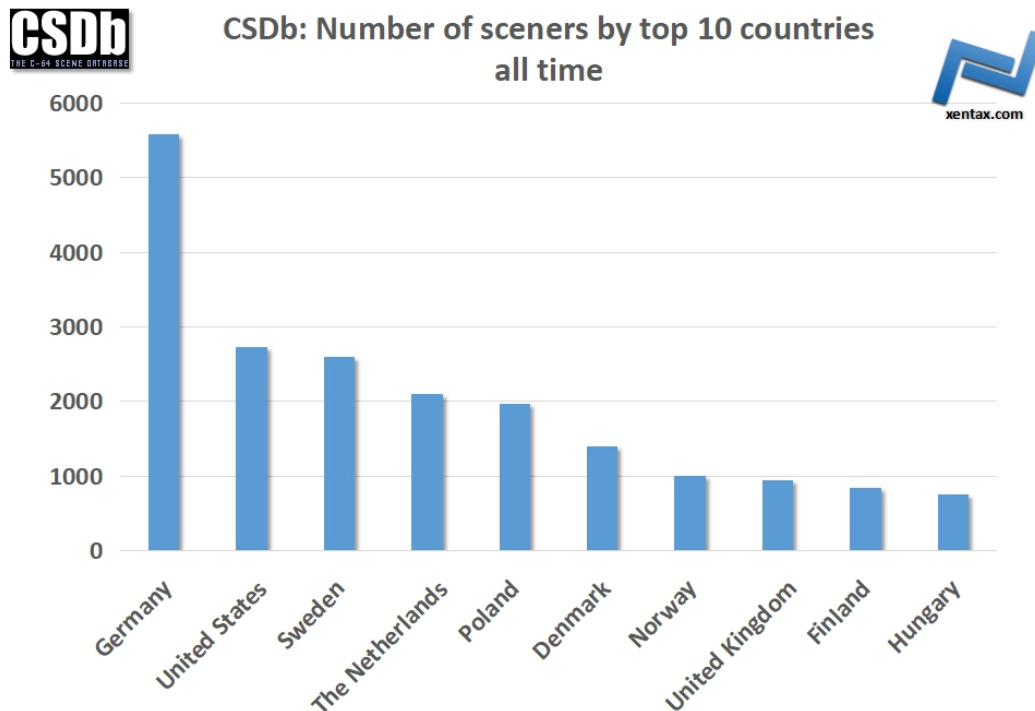
**Figure 6. 3-months average number of releases, by month, in the period 1984-2020.** The value for January 1984 includes November and December 1983. The past couple of years (2018-2020) it appears the number of monthly releases is at the level of the year 1994.



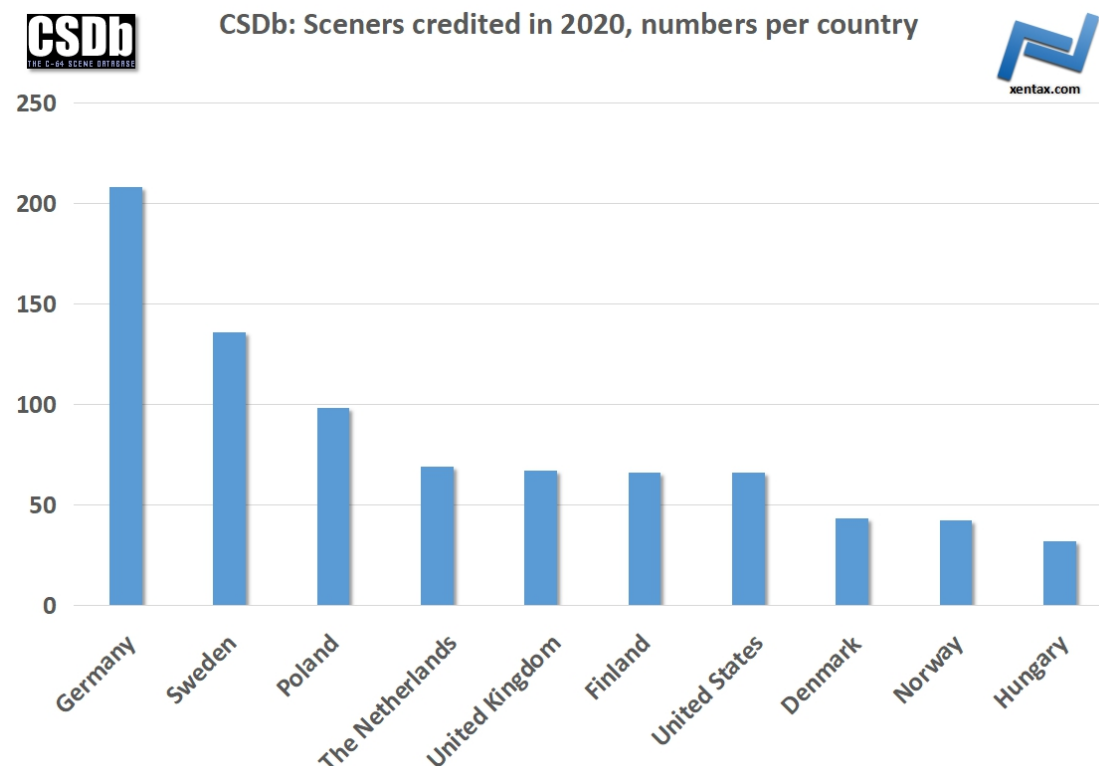
**Figure 7. Monthly releases expressed as percentage of the total number of releases that year.** This may not be the prettiest of figures, but I include it to visualize a number of things. For the 93283 releases that had a month and year of release in the database we can take a look at how much each month contributed to the total releases each year. 1988 is that year with the least difference between the months: if you take 100% and divide it by 12 months, you will get 8.3% per month. So for each year the average % of releases per month is 8.3%. In 1988 very few months deviate from that 8.3%, meaning there is **hardly any effect of holidays or what have you**, it's a hyperactive scene. Before 1988 a lot of stuff came out in November and December, and yes December is one of those months that is always higher than average. Now take a look at **1997-2007**, which overlaps the period of most inactivity in the scene I mentioned in DUPLUS. That decade April and August were the most prominent months to release anything, while January and May were the slowest months. Clearly, there seems to be some kind of season effect going on that isn't visible in all those other periods. Perhaps whoever was active did so mostly in those months.



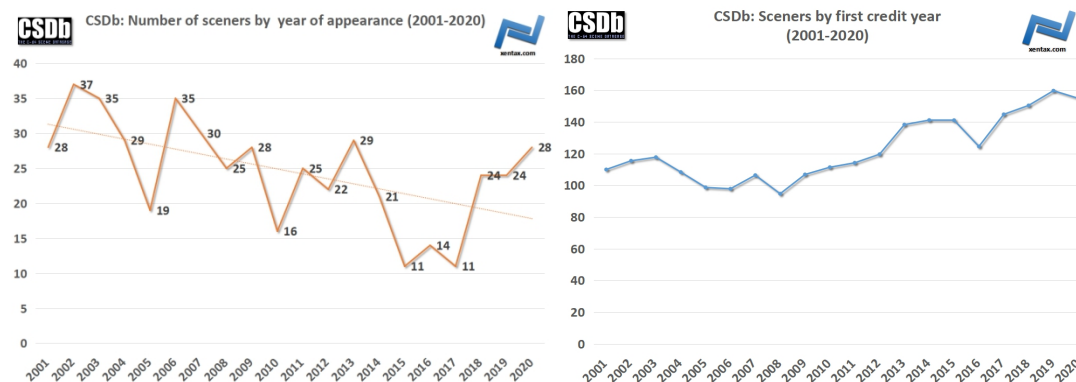
**Figure 8. Monthly contribution to yearly total number of releases over 1982-2020 period vs expected average of 8.3% per month.** Less releases in May, June, January and September. More in December, July and August.



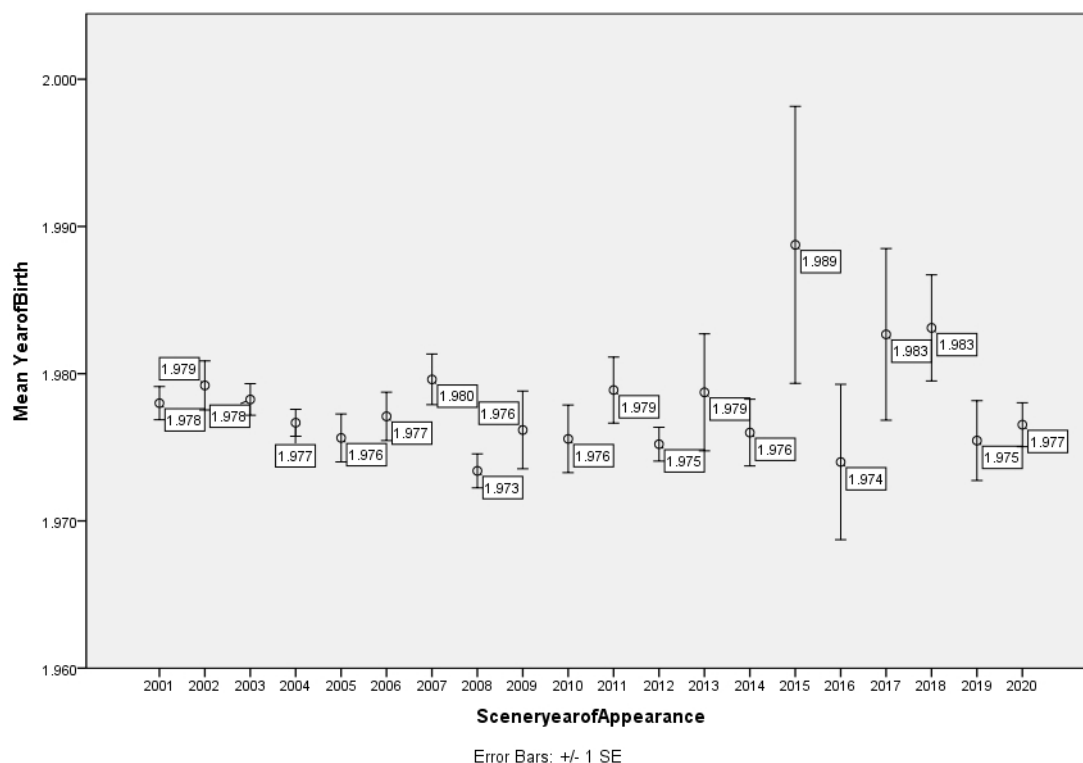
**Figure 9. The number of sceners listed at CSDb by top 10 country.** CSDb has 31093 sceners in the database, of which 75% have a country or origin entry. Judging by the above numbers, for example, about 1 in 5 sceners is from Germany (18%) or from a Nordic country (19%).



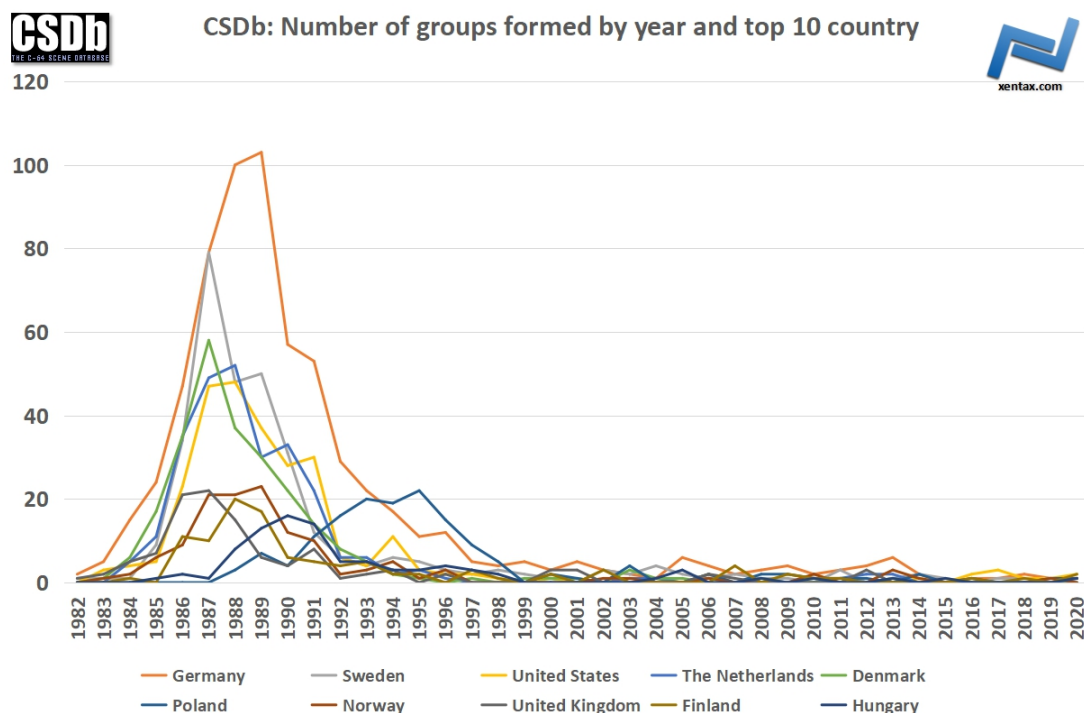
**Figure 10. Sceners credited in 2020, numbers by top 10 countries.** These are the same countries as in Figure 9, only some shifts in places for some. There were 1149 sceners credited in total in 2020, the top 10 countries with 827 sceners representing 72% of those. Note that sceners may have been credited who are no longer active (for music, code, graphics etc. they created in the past).



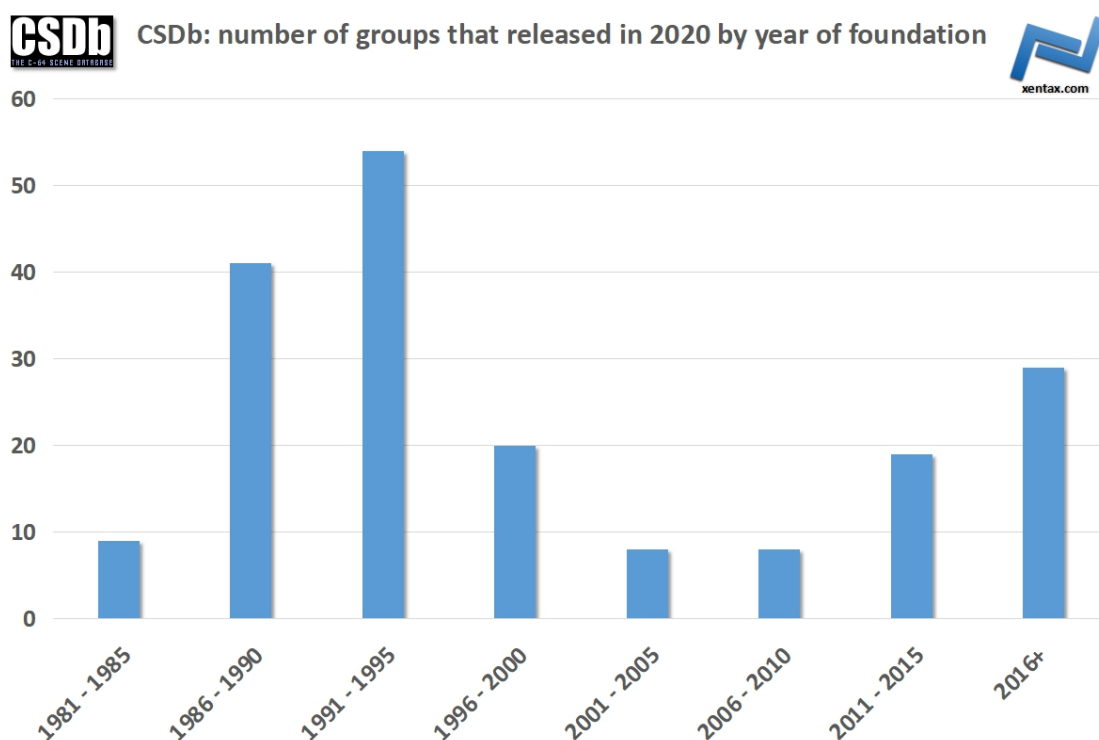
**Figure 11. Number of new sceners by year of appearance (A) and by year of first credit (B) the past two decades.** Notably, when looking at year of appearance there is a clear trend of less and less new sceners. We do see an increase again from 2018 onwards, we cannot tell if this is a trend or similar spikey behaviour as seen in other years. However, looking at the year of first credit we see an increase since 2010 in sceners getting their first credit. See the appendix below for discrepancy between the two properties. There are 1261 out of 2737 sceners that have both filled in that had their year of appearance before their first credit, sometimes far before. Then there are 215 that “appear” after they already had their first credit. So there is some database cleaning to do. Some mixed signals then from this data. It might be that there is a decline in new sceners, but some old ones starting to do new things and finally get their first credit. It’s never too late! :)



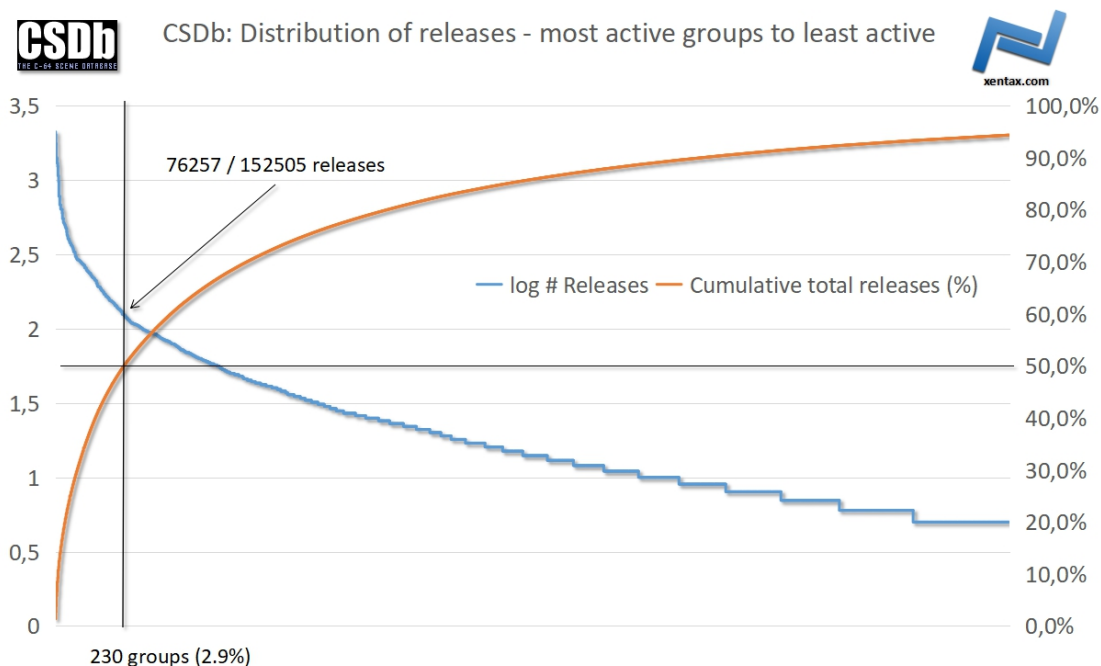
**Figure 12. Mean year of birth of new sceners by year of appearance.** Note that there isn’t any visible trend of younger people entering the scene, apart from 2015, 2017 and 2018. The majority are older than 40, birth years revolving around 1976. On the contrary, if you wish to see any trend it may be that newly appearing sceners are more and more a bit older. Sadly, because it would have been good to have fresh new young people come in instead of same old rapidly getting redundant old folk . :)



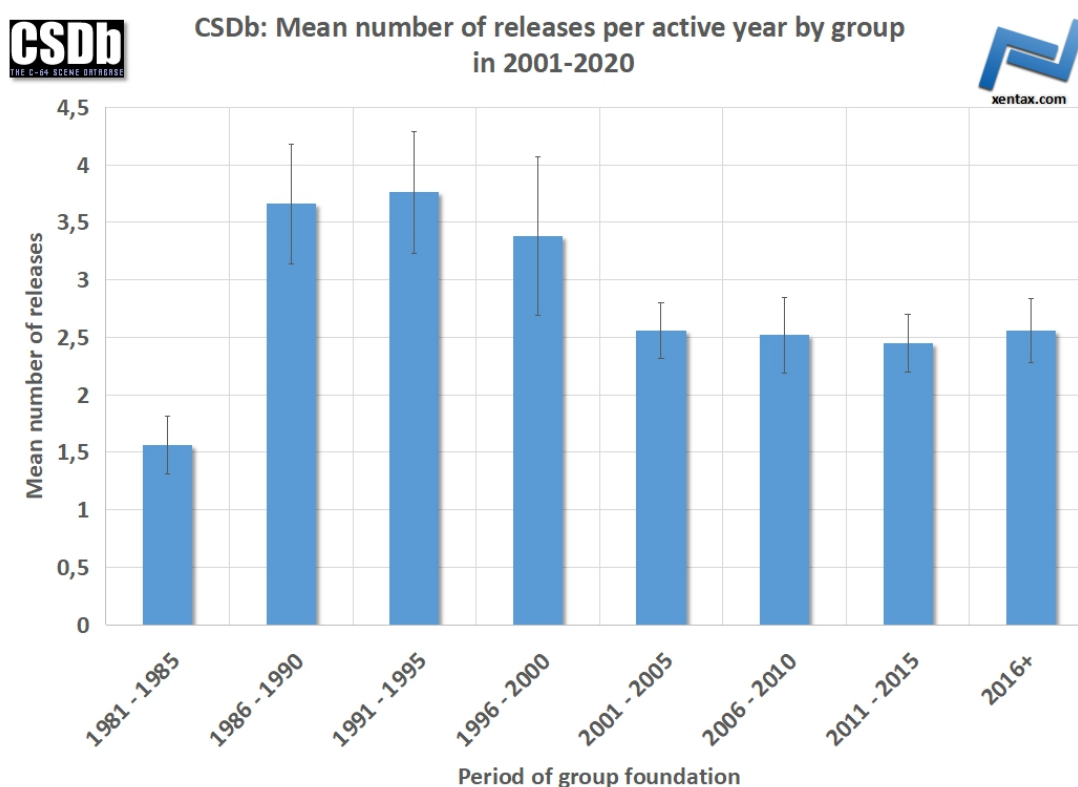
**Figure 13. Number of groups formed by year and top 10 country.** 5 countries drive the establishment of the C64 scene in the first 5 years since launch of the computer: Germany, Sweden, Denmark, The Netherlands and the United States. Poland and to a lesser extend Hungary are late to the party. UK never reaches those heights and the number of newly formed groups is already at just a few in 1989.



**Figure 14. Number of groups that released a production in 2020 by year of foundation.** Groups that started in 1991-1995 were represented highest in the list of groups that released something in 2020. This doesn't say anything about how many releases, just that they released something. Few group from 2001-2010. Interestingly, the socializing seems to pick up again after that as more new groups were formed that also released something in 2020! The total number of these groups listed (with a foundation year) was 188.

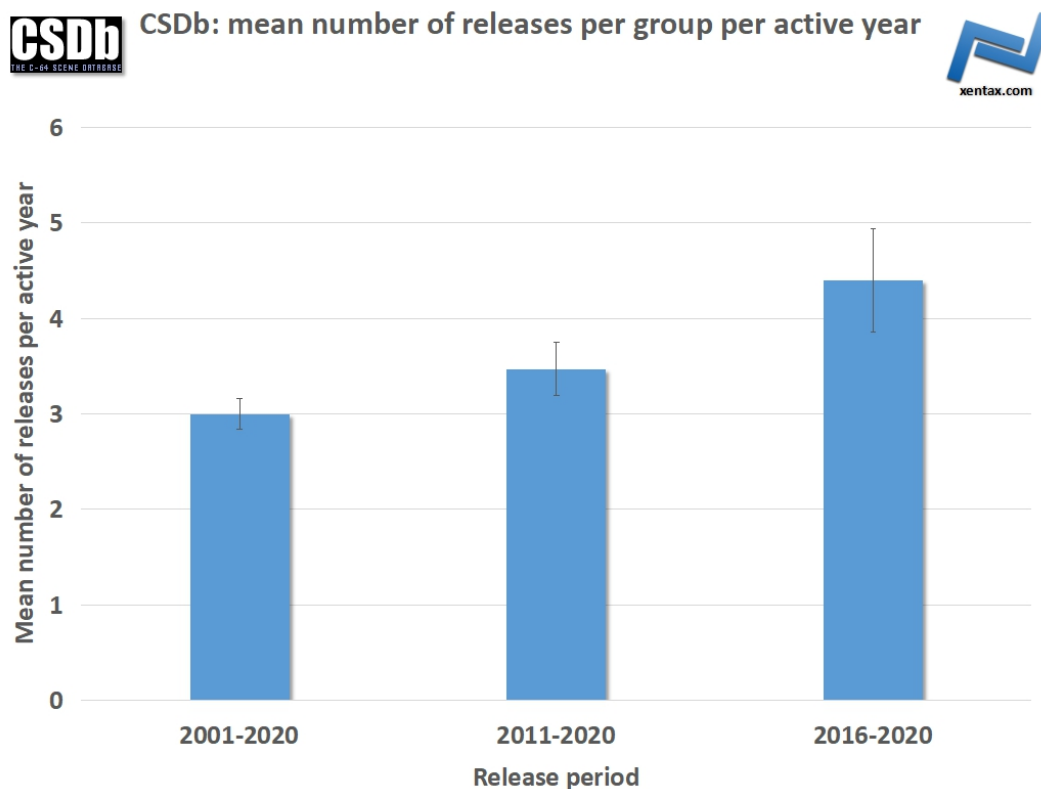


**Figure 15. Distribution of releases by groups, most active to least active.** 230 groups (2.9%) that were mentioned for releases contribute 50% of the total number of these releases. In this analysis there are 152505 total releases connected to 7975 groups (G-IDs).

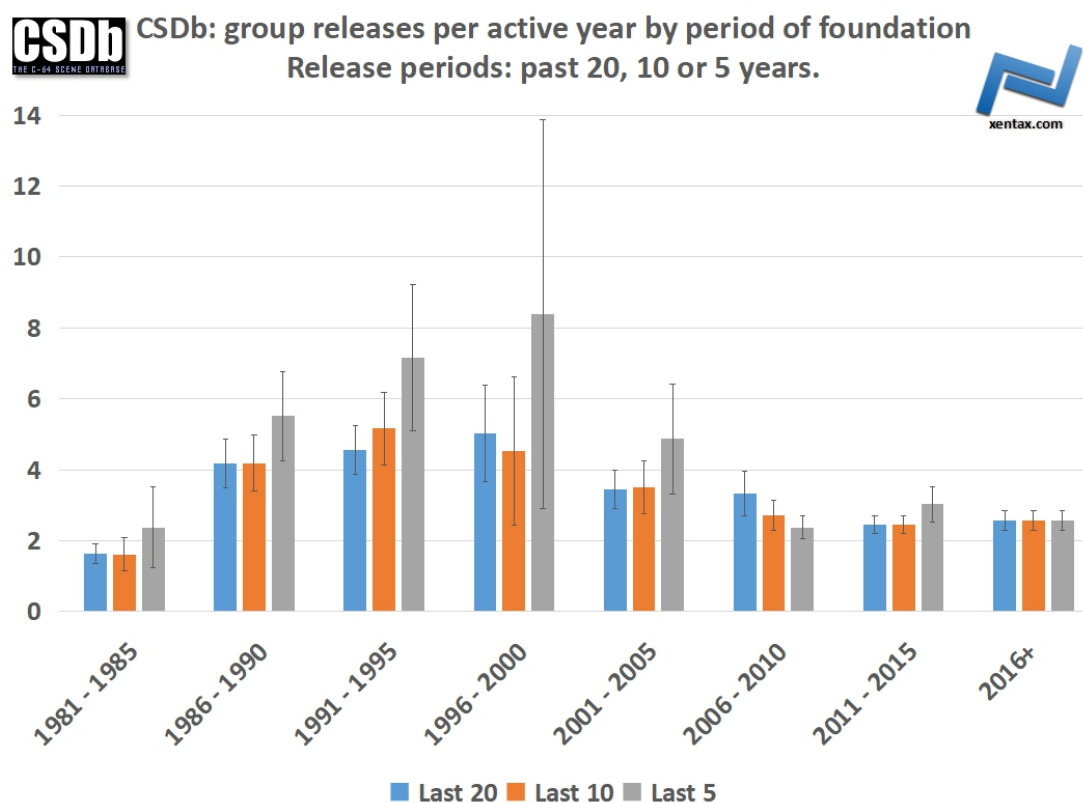


**Figure 16. Mean number of releases per group per active year in the past 20 years.** This is further stratified by year when the groups were formed. An active year means a year when a group released at least one product. Groups formed the past 20 years seem to be similar regarding release activity. Group formed between 1986 and 2000 seem to be a little more active.



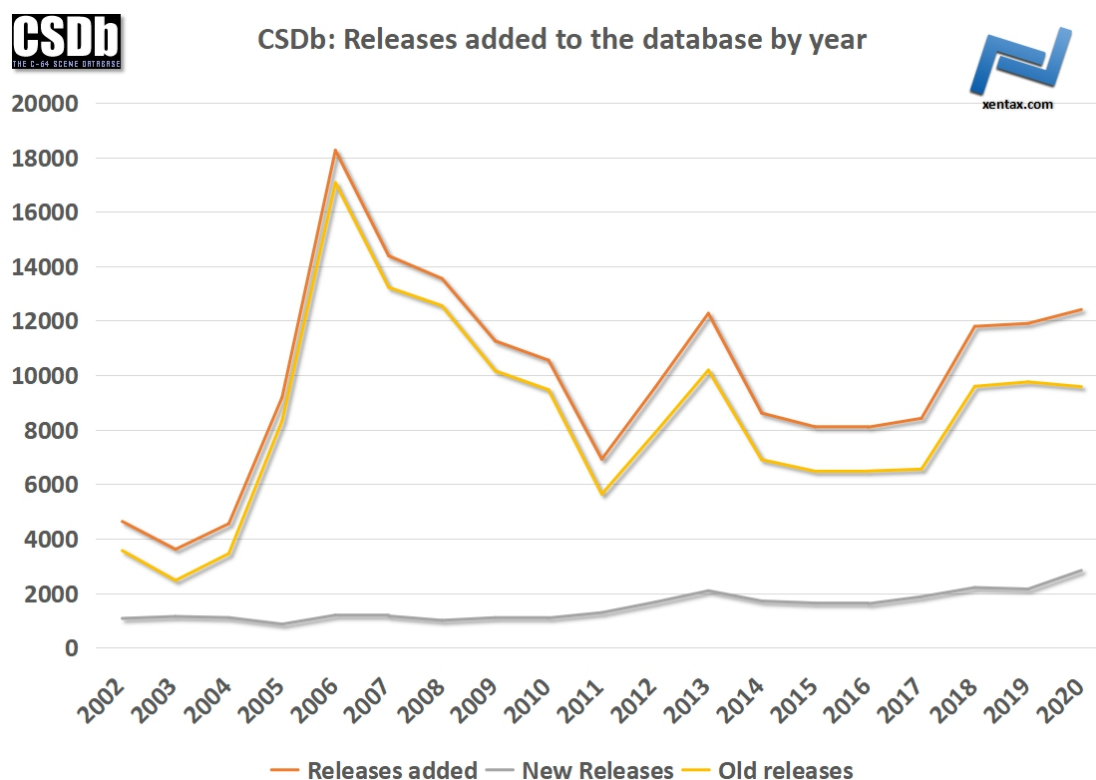


**Figure 17. Mean number of releases per group per active year the past 5, 10 or 20 years.** Note the increase in releases (per year the groups were active) when going back more recently.

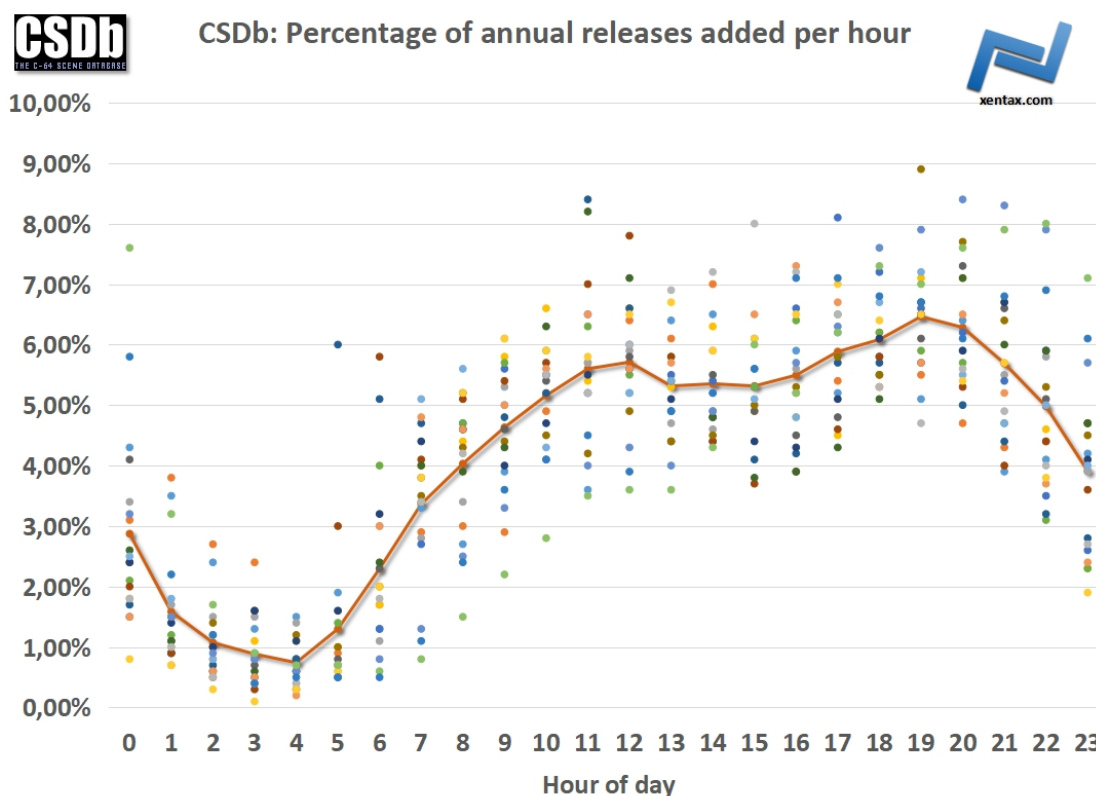


**Figure 18. Mean number of release per group per active year stratified by year of group formation, over the past 5, 10 or 20 years.** The apparent increase in number of releases per active year in the recent 5 years seems to be driven by those groups that formed before 2006, in particular those that formed between 1991 and 2000.

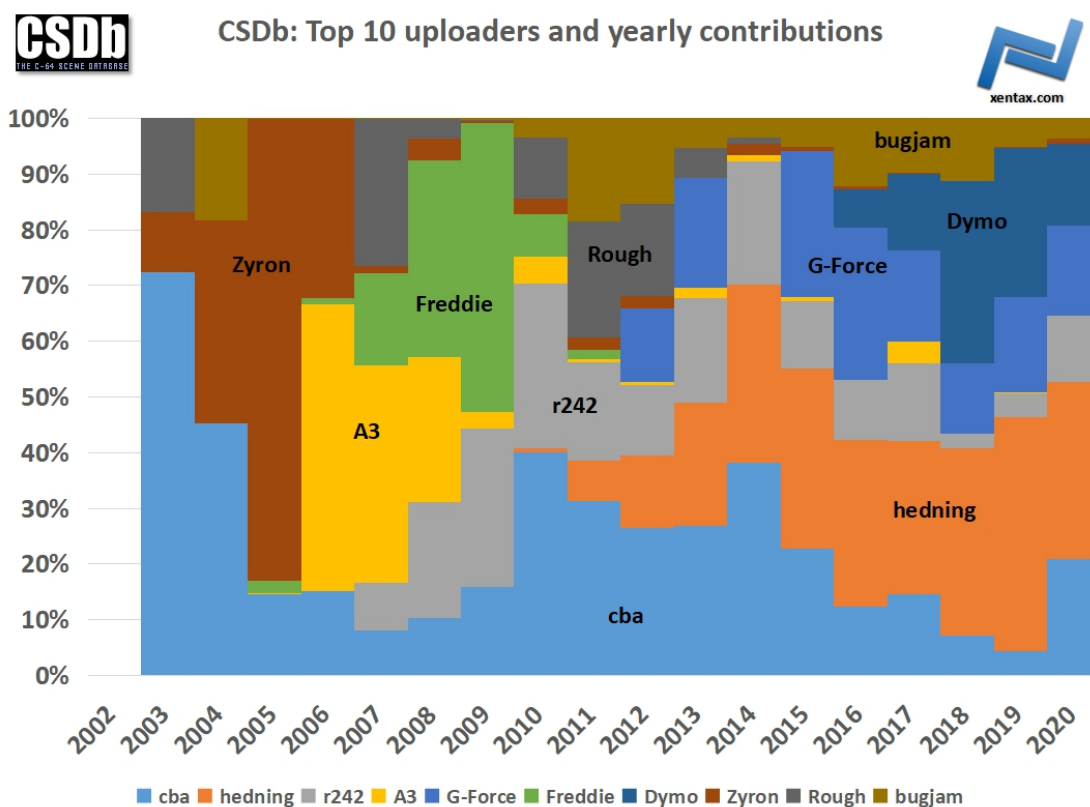




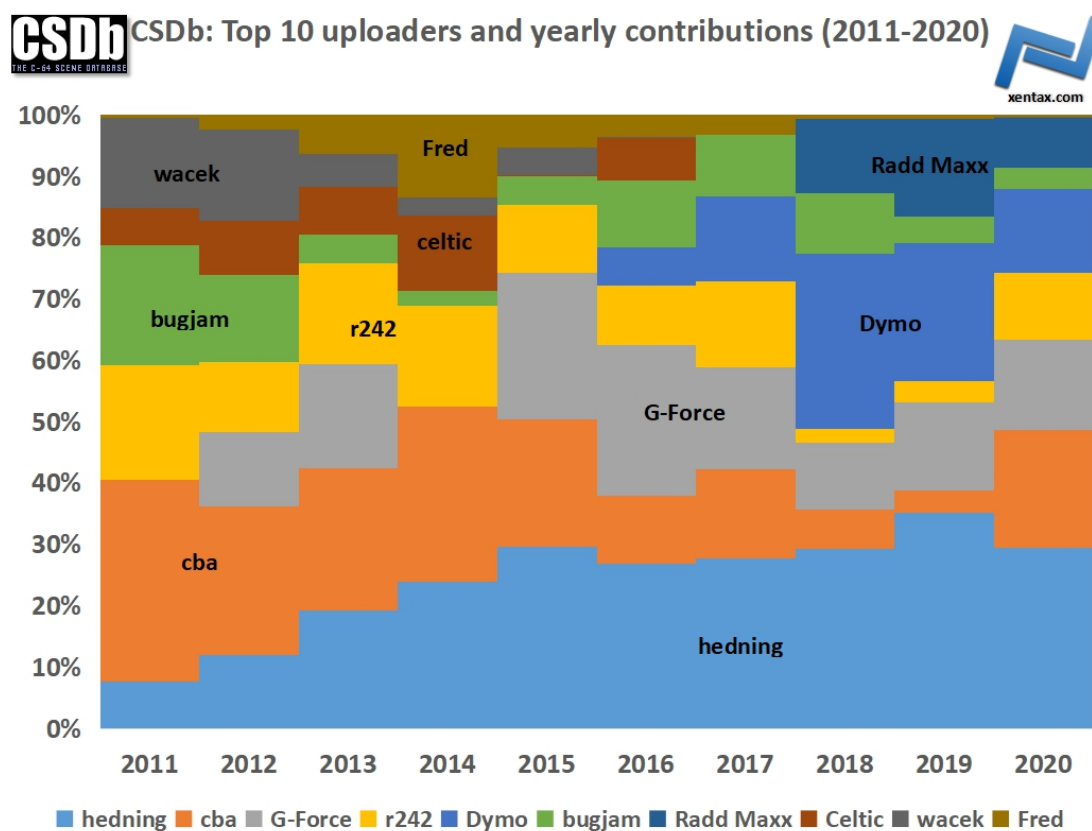
**Figure 19. The number of releases added to the database since start of the date of creation being collected.** *Releases added* curve is the total number of releases added, this can be further separated into *new releases* (new products in that year) and *old releases* (products from earlier years). After an initial surge there is a decline to 2011 after which apparently new sources have been identified. The past three years there are almost 10000 old releases added annually.



**Figure 20. Percentage of total annual releases added to CSDb per hour of day.** Noon and 7:00 PM are the peaks of day, while most uploaders are sleeping at 04:00 AM. (period: 2002-2020).



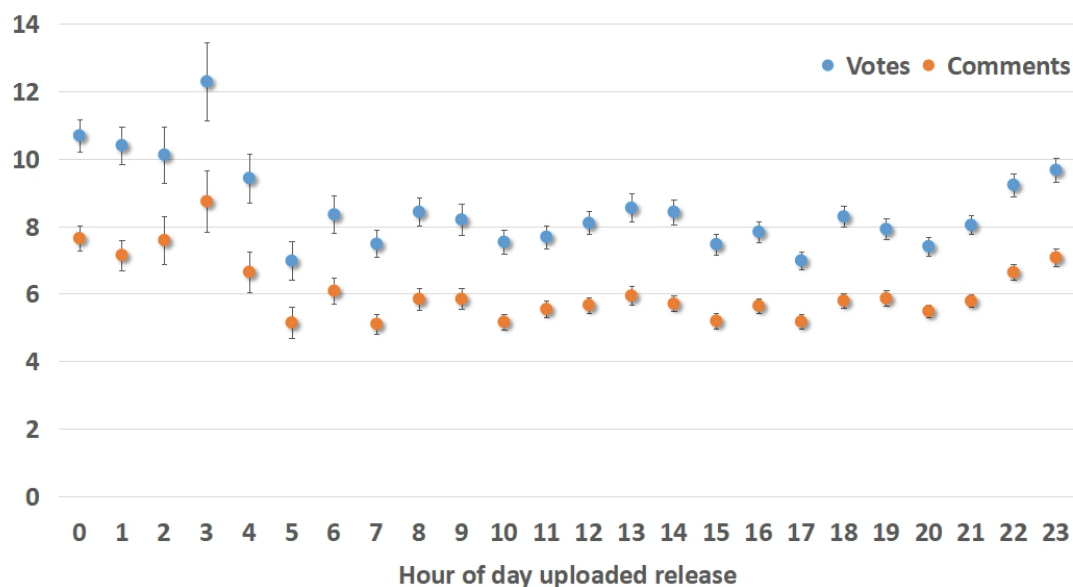
**Figure 21. Top 10 uploaders of all time and their yearly contributions in percentages.** cba is a constant in this equation (16105) and has the lead, followed by hedning (14797) and r242 (11641).



**Figure 22. Top 10 uploaders the past decade and their yearly contributions.** The bulk of new sources of releases to add (after the decline up to 2011, see Figure 19) came clearly from hedning, G-Force, Dymo and Radd Maxx.



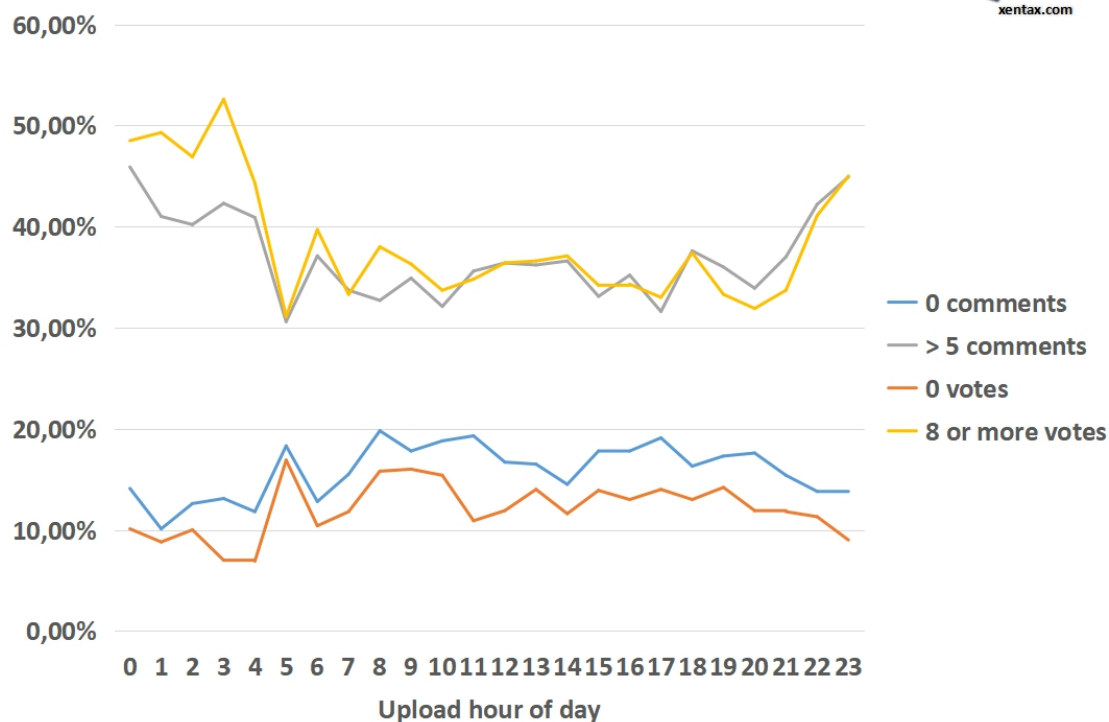
### CSDb: Upload time and number of votes and comments (2011-2020)



**Figure 23. Relationship between time of upload of a release and the interaction of the community.** The most commented releases were done after 11 PM, the number of votes they got following the same pattern. A particular sweat spot seems to be between 3 and 4 AM. Whatever you do, do not upload at 7:00, 10:00, 15:00 or 17:00 hour. ;-). So if you're on this side of the timezone, better set your clock to around 3:00 in the morning to upload your latest creation. ;-)



### CSDb: Distribution of votes and comments by upload hour (2011-2020)



**Figure 24. Relationship between time of upload of a release and getting comments and votes.** Releases uploaded after 22:00 have a higher chance of getting 8 or more votes and more than 5 comments, so the ideal period seems to be between 22:00 and 04:00. Don't upload between 5 and 6!

**Table 1. Top 10 groups releasing in 2020.**

Position	Group*	Releases	% of total	Founded	Country
1	Excess	202	9,3%	1991	Germany
2	Hokuto Force	182	8,4%	1988	Italy
3	Laxity	154	7,1%	1991	Germany
4	Genesis Project	144	6,6%	1986	Germany
5	Onslaught	82	3,8%	1995	Australia
6	MultiStyle Labs	81	3,7%	2000	Poland/Germany
7	Triad	65	3,0%	1986	Sweden
8	Atlantis	44	2,0%	1991	Switzerland
9	Artline Design	40	1,8%	1989	Finland
10	Raiders of the Lost Empire	38	1,8%	1989	Belgium

All groups are more than 20 years old. Only releases attributed to a group are counted (2170). 48% of all these releases came from the top 10 groups.

\*Co-ops are counted double.

**Table 2. Top 10 groups by recent periods**

Position	2001-2020			2011-2020			2016-2020		
	Group	Releases	% of total	Group	Releases	% of total	Group	Releases	% of total
1	Hokuto Force	1067	4,9%	Genesis Project	904	6,6%	Hokuto Force	721	9,3%
2	Laxity	931	4,3%	Laxity	899	6,5%	Laxity	561	7,2%
3	Genesis Project	908	4,2%	Hokuto Force	885	6,4%	Excess	550	7,1%
4	Onslaught	801	3,7%	Excess	582	4,2%	Genesis Project	510	6,6%
5	Excess	635	2,9%	Onslaught	497	3,6%	Onslaught	237	3,1%
6	Triad	576	2,6%	Triad	365	2,7%	Triad	228	2,9%
7	Singular	483	2,2%	MultiStyle Labs	260	1,9%	MultiStyle Labs	181	2,3%
8	The New Dimension	382	1,8%	Hackersoft	250	1,8%	Atlantis	159	2,1%
9	MultiStyle Labs	369	1,7%	Atlantis	243	1,8%	Mayday!	140	1,8%
10	Wrath Designs	338	1,6%	Singular	236	1,7%	Fairlight	133	1,7%
Total groups:	992			701			474		
Top 10 contribute:	30%			37%			44%		

Recent 5 years show the disappearance of Singular from the top 10. Atlantis came in the past 10 years, while Mayday! the past 5 years. A brief moment of Hackersoft the past 10 years. Overall however the same groups drive the releases more and more each period, from 30% for the past 20 years to 44% the past 5 years. The number of active groups is also dropping from 992 to 474.

**Table 3. Sceners credited who appeared in recent periods**

Position	2001-2020				2011-2020				2016-2020			
	Name	Year	Country	Credits	Name	Year	Country	Credits	Name	Year	Country	Credits
1	Richard	2001	UK	1024	Karmic	2015	Canada	126	Mibri	2018	UK	70
2	Fredrik	2009	Sweden	243	Dr. Strange	2013	Italy	96	Worrior1	2018	Finland	58
3	Saul Cross	2005	UK	178	Dr. TerrorZ	2013	Finland	94	MaxGlide	2016	Germany	31
4	Karmic	2015	Canada	126	SIDWAVE	2011	Denmark	85	Kody	2020		30
5	Rail Slave	2006	Wales	115	Mibri	2018	UK	70	Golara	2018	Poland	27
6	Conrad	2007		107	Mythus	2013	Sweden	62	Durchspieler	2019	Germany	26
7	Dr. Strange	2013	Italy	96	Worrior1	2018	Finland	58	The Joker	2018	Austria	25
8	Dr. TerrorZ	2013	Finland	94	Wertstahl	2012	Germany	53	Narcisound	2020	Spain	17
9	Map	2006	The Netherlands	93	Snabel	2015	Denmark	48	ComSha	2017	Austria	16
10	Bieno64	2008	Spain	93	nomiStake	2011		44	DeepCore	2019	Germany	15

Note that this uses the "Year of appearance" value in Perffs dataset and may not be complete. I decide to add this table anyway, since it does indicate a bit who some of the "new" sceners are.

**Table 4. Top 30 groups during scene heyday (1982-1994)**

Position	Group	Country	First year	Last year	Releases
1	Hotline	The Netherlands	1986	1992	1759
2	Ikari	United Kingdom	1987	1993	1514
3	Triad	Sweden	1986	2020	1428
4	Genesis Project	Germany	1986	2020	1104
5	Fairlight	Sweden	1987	2020	968
6	The Dominators	Denmark	1986	1997	955
7	Fantastic 4 Cracking Group	Italy	1983	2020	931
8	Beastie Boys	Germany	1987	1991	793
9	Eagle Soft Incorporated	Canada	1982	1997	776
10	Chromance	Hungary	1990	2009	706
11	The Ruling Company	The Netherlands	1988	2008	678
12	Talent	United Kingdom	1989	1997	676
13	North East Crackers	United States	1988	1996	637
14	Alpha Flight	Germany	1985	2020	628
15	Legend	Belgium	1988	1998	624
16	Warriors of the Wasteland	Belgium	1986	2018	597
17	Doughnut Cracking Service	United Kingdom	1984	1992	582
18	ABC Crackings	The Netherlands	1984	1988	553
19	Illusion	Norway	1989	2016	548
20	A Touch of Class	United States	1987	1992	546
21	Lazer	Austria	1988	1991	543
22	Italian Cracking Service	Italy	1988	1992	543
23	X-Ray	Germany	1988	1992	538
24	Fucked Beyond Repair	United States	1986	1990	527
25	Vision	The Netherlands	1988	2020	496
26	X-Factor	Denmark	1989	1993	483
27	Success	Germany	1989	2013	478
28	Excess	Germany	1991	2020	461
29	The Sharks	Germany	1987	1997	422
30	Pulsar	United Kingdom	1988	2014	418

Since not all release have a year of release in the dataset, some manual look up had to be done for some. **Year of first and last release ever is indicated by group, but releases are limited to max 1994.** Hotline and also Ikari never cease to amaze in the numbers they were able to produce in just 6 years.

**Table 5. Top 30 releasing groups all time**

Position	Group	Country	First year	Last year	Releases
1	Triad	Sweden	1986	2020	2166
2	Genesis Project	Germany	1986	2020	2040
3	Hotline	The Netherlands	1986	1992	1827
4	Ikari	United Kingdom	1987	1993	1573
5	Fairlight	Sweden	1987	2020	1424
6	Laxity	Germany	1991	2020	1422
7	Excess	Germany	1991	2020	1385
8	Fantastic 4 Cracking Group	Italy	1983	2020	1368
9	Onslaught	Australia	1995	2020	1224
10	Alpha Flight	Germany	1985	2020	1188
11	Hokuto Force	Italy	1988	2020	1072
12	The Dominators	Denmark	1986	1997	1009
13	Chromance	Hungary	1990	2009	985
14	Warriors of the Wasteland	Belgium	1986	2018	891
15	Eagle Soft Incorporated	Canada	1982	1997	839
16	Mayhem	United Kingdom	1988	2004	795
17	Beastie Boys	Germany	1987	1991	793
18	Talent	United Kingdom	1989	1997	739
19	The Ruling Company	The Netherlands	1988	2008	694
20	Legend	Belgium	1988	1998	684
21	Raiders of the Lost Empire	Belgium	1989	2020	663
22	North East Crackers	United States	1988	1996	656
23	Vision	The Netherlands	1988	2020	653
24	Samar Productions	Poland	1993	2020	620
25	Singular	Hungary	1995	2020	592
26	Doughnut Cracking Service	United Kingdom	1984	1992	582
27	Illusion	Norway	1989	2016	567
28	Hitmen	Germany	1989	2020	566
29	Atlantis	Switzerland	1991	2020	555
30	ABC Crackings	The Netherlands	1984	1988	553

Known first and last year of release is listed. **Even after all these years Hotline and Ikari are place 3 and 4, while their last release was almost 30 years ago!**

## References

1. CSDb: Quantify Me as drama release  
<https://csdb.dk/release/?id=93211>
2. A PDF version of CSDb: Quantify Me  
<http://www.xentax.com/wp-content/uploads/2010/08/CSDb%20analyses.pdf>
3. Mindspook analysis that led to the prophecy of a new more active scene  
[http://c64.xentax.com/downloads/csdb\\_quantifyme\\_part2\\_mindspook1.doc](http://c64.xentax.com/downloads/csdb_quantifyme_part2_mindspook1.doc)
4. CSDb: Quantify Me 2018 (DUPLUS)  
[http://c64.xentax.com/media/csdb\\_quantifyme\\_2018.pdf](http://c64.xentax.com/media/csdb_quantifyme_2018.pdf)
5. The Commodore 64 Scene Database that No Name started in 2001 and the source of all this nice data. <https://csdb.dk/>

## Appendix

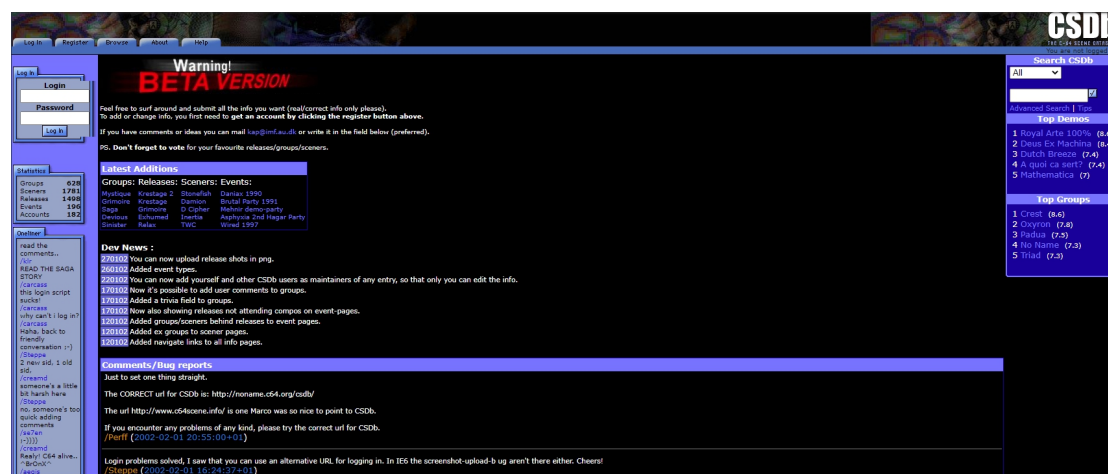
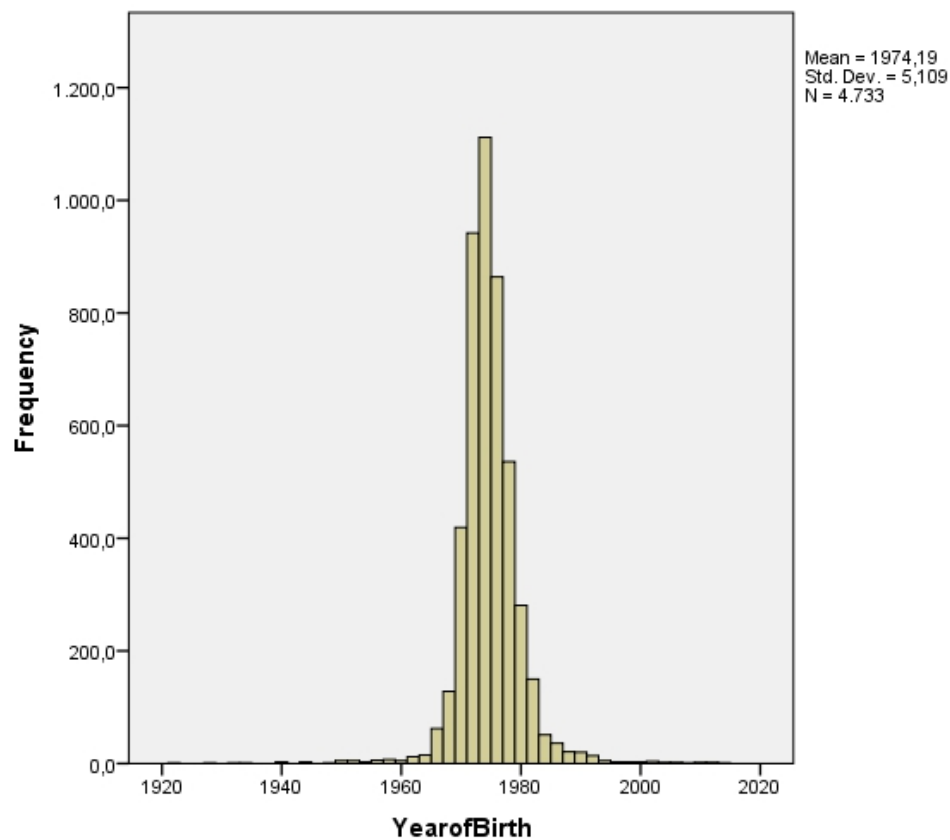


Figure A1. Snapshot of CSDb in February 2002, then via <http://noname.c64.org/csdb>  
Listing 628 groups, 1781 sceners, 1498 releases.

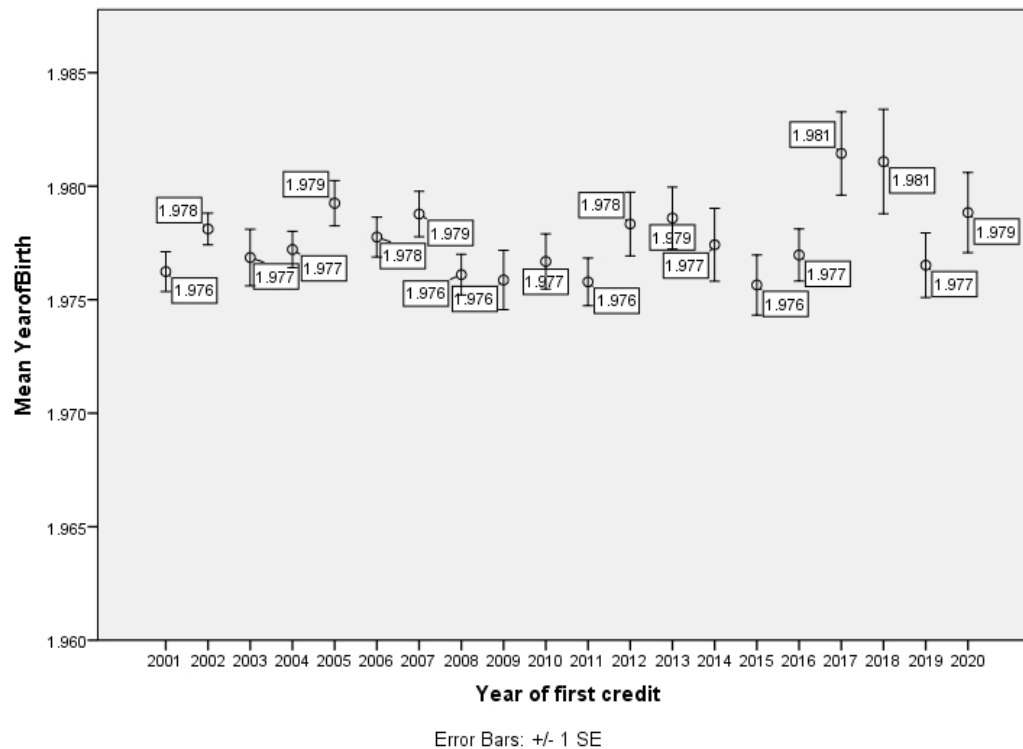
Table A1. Descriptive numbers of the data used with cut-off 1<sup>st</sup> of January 2021 (so thru 31<sup>st</sup> of December 2020)

Type	Descriptives
<b>Sceners</b>	<b>31093 total</b> 7918 (25.5%) have NO credits listed 7983 (25.7%) have 1 credit listed 5182 (16.7%) have more than 10 credits listed (1/6!) 4733 (15.2%) that have a year of birth listed account for ~50% of the credits. 7591 (24.4%) have no country listed 209 (0.67%) have a year of death listed 1261 have their year of appearance BEFORE their year of first credit (sometimes WAY before) 1261 (yes, same number!) have matching year of appearance and year of first credit 215 have their year of appearance AFTER their year of first credit
<b>Releases</b>	<b>188963 total</b> 171395 (90.7%) attributed to a group 160709 (85.0%) have a release year 28888 (15.3%) have no credits 1798 uploaders added the releases to the database
<b>Groups</b>	<b>10002 total</b> 2946 (29.5%) with Founded Year 2027 (20.2%) have no year of first release 982 (9.8%) have no release 7783 (77.8%) with Base country ( <b>64</b> countries)





**Figure A2. Histogram of scener year of birth.** Mean and median are the same: 1974.



**Figure A3. Mean scener year of birth by year of their first credit.** Period 2001-2020. Again, some outliers in the 1980's the recent 5 years. Data labels are rounded to nearest integer.