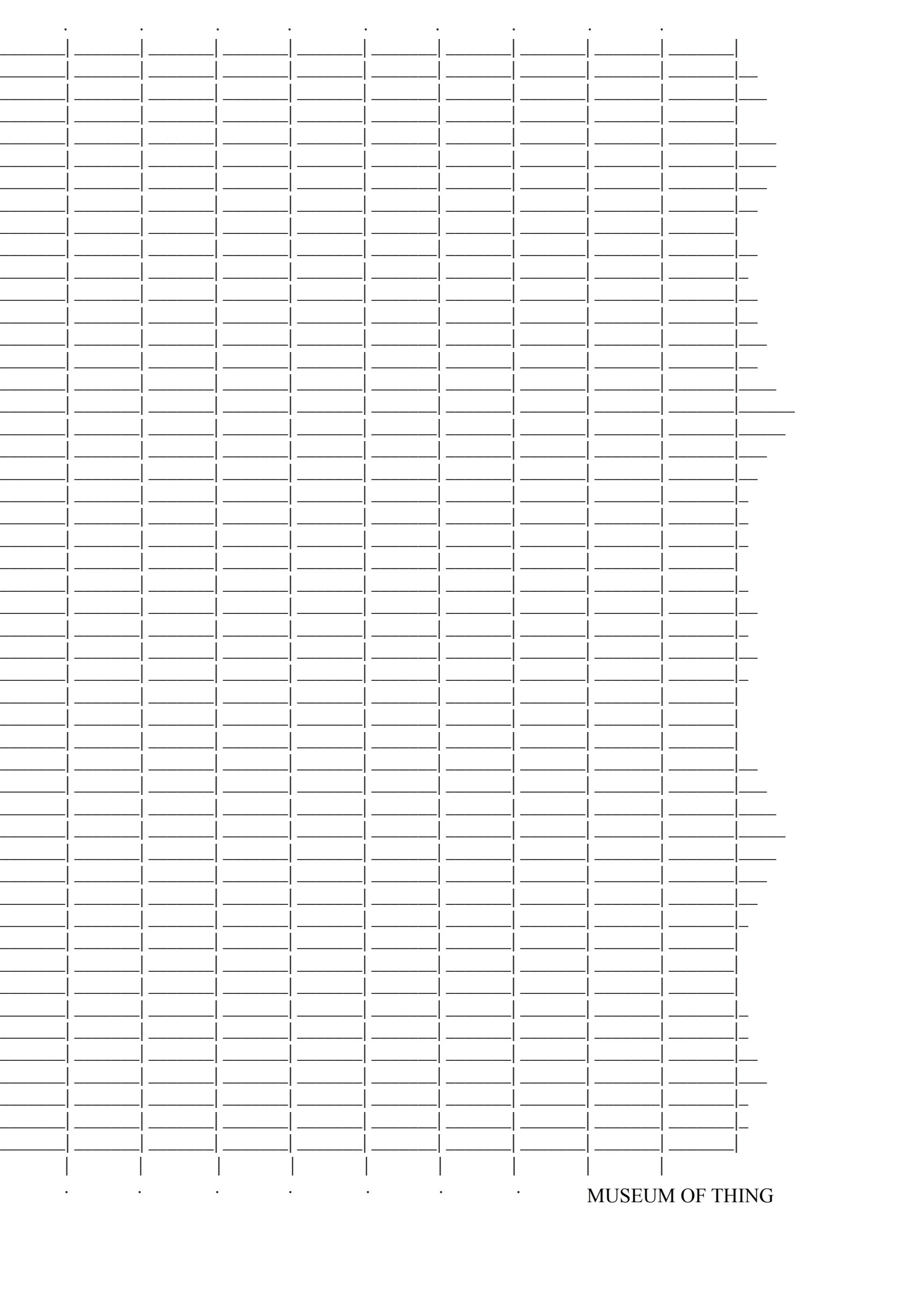




I claim no right over any content or website displayed in this book. I do not own any grid, number, data or device that is on display. i kindly ask you to visit these websites to make sure they get the spotlight not just in this book but

Dear Reader,

This is a catalogue of cataloging.

I have been researching the legal borders that separate belongings and create cultures of neglect and discard for my masters project Resurrection. Throughout my research I hit a lot of walls, trying to believe in sentimental connections and values that connect us to each other, to the land, to a government and to things. Whenever I felt lost, I turned to this part of my research I want to share with you. As Agnes Martin once said “If the painting has perfect scale, it moves you”.

I started collecting web pages that are focused on tech obsessions like calculators, microcomputers, measurement tools, time keeping devices. I found passion and love in corners of the web, made by dedicated people who devote sometimes a lifetime into their research kin. It has been a pleasure to witness and observe the ways in which people cherish, collect, save and share. There is a scarcity of spare time and diversity in technologies that make it a rarity to stumble upon obsessions online. But hereby is a part of my own collection of web tables, grids, logs and things, for you to get inspired by and hopefully start keeping a blog about those close to your heart so I can add it to my collection.

sevgiler,

sevgi

Alphabetical Brand/Type List on A* (Only Calculators)	AKA (Also Known As)	Label on Back	Product Number	Year of Introduction	Classification
AAIDE: YSE582			YSE582		Pocket
ABATRONIX: 676 (version-1)				~1973	Pocket
ABATRONIX: 676 (version-2)				~1973	Pocket
ABATRONIX: CA06 (version-1)	Model CA-06		CA06 (CA-06)	~1973	Pocket
ABATRONIX: CA06 (version-2)	Model CA-06		CA06 (CA-06)	~1973	Pocket
ABINAR: ESR86B	SCIENTIFIC CALCULATOR, ESR 86B		ESR86B (ESR 86B)		Pocket
ABINAR: LC225CK (version-1)	CHECK MASTER		LC225CK		Pocket / Financial+Business (cheques)
ABINAR: LC225CK (version-2)	CHECK MASTER			1977	Pocket / Financial+Business (cheques)
ABM: (Unknown model 1)	electronic, diamant		electronic	~1975	Desktop with Display
ABM: (Unknown model 2)	electronic		electronic	~1975	Pocket
ABM: (Unknown model 3)	diamant memory		diamant-memory	~1975	Pocket
ABM: 120	diamant 120		120	~1975	Pocket
ABM: 2	diamant-memory 2	diamant-memory 2	2	~1975	Pocket
ABM: 3	diamant-memory 3	diamant-memory 3, 88.400.19	8840019 (88.400.19)	1977	Desktop with Display+Printer
ABM: 312PD			312PD		Pocket
ABM: 4	diamant 4		4	1977	Pocket
ABM: 4003	diamant-memory 4003		4003	~1975	Pocket
ABM: 5	diamant 5		5	1977	Pocket
ABM: 7003	diamant-scientific 7003		7003	~1976	Pocket
ACADEMY: (Unknown model)					Pocket
ACADEMY: AJS1			AJS1	1977	Pocket
ACADEMY: Executive		EXECUTIVE, ELECTRONIC PRINTING CALCULATOR	Executive	1977	Desktop with Display+Printer
ACC: 811A	EXECUTIVE	EXECUTIVE, ELECTRONIC PRINTING CALCULATOR WITH DISPLAY, 71375	811A	~1975	Pocket
ACCONA: EC821A (version 1)	MINI-CARD, EC-821A, AUTO SHUT-OFF	MINI CALCULATOR	EC821A (EC-821A)	1987	Credit Card
ACCONA: EC821A (version 2)	MINI-CARD, EC-821A, AUTO SHUT-OFF		711652	1987	Credit Card
ACCONA: EC821A (version 3)	MINI-CARD, EC-821A, AUTO SHUT-OFF	MINI CALCULATOR, No. 711652	711652	1987	Credit Card
ACCONA: EC821A (version 4)	MINI-CARD, EC-821A, AUTO SHUT-OFF	MINI CALCULATOR, No. 711652	711652	1987	Credit Card
ACCONA: EC821A (version 5)	AUTO OFF, MINI-CARD, EC-821A	MINI CALCULATOR	711652	1987	Credit Card
ACCONA: EC822		EC-822	EC822 (EC-822)		Credit Card
ACCONA: EC831	MUSICAL TONE, EC-831		EC831 (EC-831)		Pocket / Audio
ACCONA: EC835	AUTO STOP	EC-835	EC835 (EC-835)		Pocket
ACCONA: EC839	SOLAR POWER CALCULATOR	EC-839, SOLAR POWER CALCULATOR	EC839 (EC-839)	1987	Pocket
ACCURATE CALCULATOR: A100 (version-1)		ELECTRONIC CALCULATOR, Model: A-100	A100 (A-100)	~1973	Desktop with Display
ACCURATE CALCULATOR: A100 (version-2)		ELECTRONIC CALCULATOR, Model: A-100		~1973	Desktop with Display
ACCURATE CALCULATOR: A200	200	ELECTRONIC CALCULATOR, Model: A-200	A200 (A-200)	~1973	Desktop with Display
ACCURON: (Unknown model 1)				1975	Pocket / RPN (Reverse Polish Notation)
ACCURON: (Unknown model 2)				1977	Pocket
ACCURON: (Unknown model 3)				~1974	Pocket
ACCURON: 1155			1155	~1975	Pocket
ACCURON: 600 (version-1)			600	1976	Pocket
ACCURON: 600 (version-2)			600	1976	Pocket
ACCURON: 600 (version-3)			600	1976	Pocket
ACCURON: 800 (version-1)			800	~1974	Pocket / RPN (Reverse Polish Notation)
ACCURON: 800 (version-2)			800		Pocket
ACCURON: 800 (version-3)			800		Pocket
ACCURON: 810M (version-1)			810M	~1974	Pocket
ACCURON: 810M (version-2)			810M	~1974	Pocket
ACCURON: 831	Model 831		831	~1974	Desktop with Display
ACCURON: 831M	MODEL-831M		831M	1974	Pocket
ACCURON: 850	Model 850		850		Pocket
ACCURON: 861			861	1977	Pocket
ACCURON: 876			876	1977	Pocket
ACCURON: 893	Master 893		893	~1975	Pocket
ACCURON: 897			897	1977	Pocket
ACCURON: 931	EXECUTIVE, ELECTRONIC CALCULATOR		931	~1974	Pocket
ACCURON: V			V		Pocket
ACE: MAC-I		MAC-I	MACI (MAC-I)	~1974	Pocket
ACE: MAC-LC			MACLC (MAC-LC)		Pocket
ACME ELECTRIC COMPANY: (Unknown model)					Pocket
ACME ELECTRIC COMPANY: 2200	AJAX		2200	1977	Pocket
ACME ELECTRIC COMPANY: 2500	AJAX		2500	1974	Pocket
ACME ELECTRIC COMPANY: 99			99	~1975	Pocket
ADDEX: AC07		AC 07	AC07		Credit Card
ADDEX: DB205	DB 205		DB205 (DB 205)	1995	Pocket / Organizer, PDA
ADDEX: DB302	DB 302		DB302 (DB 302)	1995	Pocket / Organizer, PDA
ADDEX: DB502	DB 502, ORGANISATEUR ELECTRONIQUE PERSONNEL		DB502 (DB 502)	1998	Pocket / Organizer, PDA
ADDEX: DB618	DB 618		DB618 (DB 618)	1995	Pocket / Organizer, PDA
ADDEX: DB910	DB 910		DB910 (DB 910)	1997	Pocket / Organizer, PDA
ADDIATOR: EL80			EL80	~1975	Pocket
ADDIATOR: EL82C			EL82C	1974	Pocket / Time
ADDMASTER: 12 Memory (version-1)	MEMORY-12		12	~1973	Desktop with Display
ADDMASTER: 12 Memory (version-2)	MEMORY-12		12	~1973	Desktop with Display
ADDMASTER: 12 Merchant	Merchant 12		12	~1973	Desktop with Display
ADDMASTER: 12 Simplex	SIMPLEX 12		12	1977	Desktop with Display+Printer
ADDMASTER: 12PD			12PD	1977	Desktop with Display+Printer
ADDMASTER: 130PD	MERCHANT 130 PD		130PD (130 PD)	1977	Desktop with Display
ADDMASTER: 145PD	MERCHANT 145 PD	MODEL - MERCHANT 145 PD	145PD (145 PD)	1972	Desktop with Display

ADDMASTER: 434PD	MARCHANT 193 PD	MODEL: MARCHANT 193 PD	193PD (193 PD)	1971	Desktop with Display
ADDMASTER: 2002	MARCHANT	ELECTRONIC CALCULATOR, MODEL 2002, 208J	2002	1972	Desktop with Display+Printer
ADDMASTER: 225	MARCHANT	MARCHANT 225	225 (MARCHANT)	1977	Desktop with Display, / Time / RPN (Reverse Polish Notation)
ADDMASTER: 253	MATH I	MODEL: 260	253	~mar-1977	Desktop with Display
ADDMASTER: 260	MARCHANT 263	MARCHANT 263, MARCHANT DIVISION, ADDMASTER CORPORATION	260	~1975	Desktop with Printer
ADDMASTER: 263			263	~mar-1977	Desktop with Printer
ADDMASTER: 265			265	~1982	Desktop with Display+Printer
ADDMASTER: 273	MARCHANT 273		273		Desktop with Printer
ADDMASTER: 293D	MARCHANT 293-D		293D (293-D)	~mar-1977	Desktop with Display+Printer
ADDMASTER: 408	MATH IV		408	~1973	Desktop with Printer
ADDMASTER: 432			432	~mar-1977	Desktop with Printer
ADDMASTER: 438	Merlin 8K		438	~mar-1977	Desktop with Printer
ADDMASTER: 8K (version-1)	Merlin 8K		8K	~1972	Desktop with Display
ADDMASTER: 8K (version-2)	Audlator 8KB	CALCULATOR	8KB	~1972	Desktop with Display
ADDMASTER: 8KB			1		Desktop with Printer
ADDMASTER: Math I	MATH III		III	~1973	Desktop with Printer
ADDMASTER: Math III				1980	Pocket / Converter
ADDOMETER: (Unknown model 1)	MADE IN U.S.A.				Pocket / Converter
ADDOMETER: (Unknown model 2)					Desktop with Printer
ADDO-X: 104			104	1977	Desktop with Printer / Typewriter
ADDO-X: 106			106	~1973	Desktop with Printer / Typewriter
ADDO-X: 9101	MODEL 9101		9101	~1973	Desktop
ADDO-X: 9102			9102	~1973	Desktop with Printer
ADDO-X: 9201	MOD 9201		9201	1972	Desktop with Display
ADDO-X: 9205			9205	~1973	Desktop with Printer
ADDO-X: 9206			9206	~1973	Desktop with Display
ADDO-X: 9207	model 9207	MOD 9207	9207	~1973	Desktop with Display
ADDO-X: 9212		MOD 9212	9212	1977	Desktop with Printer
ADDO-X: 9215 (version-1)			9215	~1973	Pocket
ADDO-X: 9215 (version-2)		9271 11 02	92711102 (92711 02)	~1973	Pocket
ADDO-X: 9218			9218	1975	Desktop with Printer
ADDO-X: 9224			9224	~1974	Pocket
ADDO-X: 9227-2			982272 (9227-2)	~1976	Pocket
ADDO-X: 9303		MOD 9303, PROD NO 9273 31 09	9303		Desktop with Display
ADDO-X: 9354		MOD 9354	9354	1970	Desktop with Display
ADDO-X: 9357		MOD 9357	9357	1969	Desktop with Display
ADDO-X: 9364		MOD 9364	9364	1971	Desktop with Display
ADDO-X: 9366			9366		Desktop with Display
ADDO-X: 9374			9374	~1972	Desktop with Display
ADDO-X: 9375			9375		Desktop with Display
ADDO-X: 9401		MOD 9401	9401	~1977	Desktop
ADDO-X: 9458		MOD 9458	9458	1977	Desktop with Display+Printer
ADDO-X: 9628			9628	1971	Desktop
ADDO-X: 9637			9637	1973	Desktop with Printer
ADDO-X: 9657		MOD 9657	9657	1969	Desktop with Display
ADDO-X: 9666			9666	~1970	Desktop with Display
ADDO-X: 9675		MODEL:- 9675	9675	1972	Desktop with Display
ADDO-X: 9676		MOD 9676	9676	1971	Desktop with Display
ADDO-X: 9677			9677	~1970	Desktop with Display
ADDO-X: 9710	Sabatronic 9910		9710	~1973	Desktop with Display, / Typewriter
ADDO-X: 9910 (version-1)	Sabatronic 9910		9910	1966	Desktop with Printer
ADDO-X: 9910 (version-2)	Sabatronic 9917		9910	1966	Desktop with Printer
ADDO-X: 9917			9917		Desktop
ADDO-X: 9958		MOD 9958	9958	~1968	Desktop with Display
ADDO-X: 9968		MOD 9968	9968	1973	Desktop with Display
ADDO-X: 9978			9978	1972	Desktop with Display
ADDO-X: D1			D1		Desktop with Display
ADDO-X: D2			D2		Desktop
ADDO-X: D3			D3		Desktop
ADDO-X: D4			D4		Desktop
ADDO-X: D4X			D4X	1974	Desktop with Display
ADDO-X: D5			D5		Desktop
ADDO-X: D5X			D5X		Desktop
ADDO-X: P1			P1		Desktop
ADDO-X: P14			P14		Desktop
ADDO-X: Ten/3			Ten3 (Ten/3)	~1968	Desktop with Printer
ADDO-X: Ten/3 MkII			Ten3MkII (Ten/3 MkII)	1970	Desktop
ADINA: 2000	electronic 2000		2000		Pocket
ADINA: 3000	electronic 3000		3000	1975	Pocket
ADMAN: 10D			10D		Desktop
ADMAN: 121			121	~1975	Pocket
ADMAN: 141			141	1977	Pocket
ADMAN: 3000			3000	1977	Pocket

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Key Style Code Practice Oscillators

Instructions: Allow time to load. Hover cursor over picture for text description. Click picture to enlarge.

Japanese key buzzers



Johnson/NYE



Monarch/Midland/TTC/Veritas





ICA Triplex



Signal/Strauss/etc.



Miscellaneous/Classic



MFJ/Velectronics



Heathkit



Uncle Sam

Connecticut

[Ajouter un nouveau film](#)

[A](#)[B](#)[C](#)[D](#)[E](#)[F](#)[G](#)[H](#)[I](#)[J](#)[K](#)[L](#)[M](#)[N](#)[O](#)[P](#)[Q](#)[R](#)[S](#)[T](#)[U](#)[V](#)[W](#)[X](#)[Y](#)[Z](#) [Tous](#)

Adox

[KB 14](#)
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[Plan-Fim 25 iso](#)
Film photo

Agfa

[Agfa Vista 400](#)
Film photo

[AGFACHROME RS 100 PLUS](#)
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[Agfacolor CNS2 126-12P](#)
Film photo

[Agfacolor pak XRG 200](#)
Film photo

[Agfapan 25](#)
Film photo

[Agfapan APX 25 Professional](#)
Film photo

[APX 100](#)
Film photo

[CT 100 Precisa](#)
Film photo

[film Agfapan 400 pour Minox](#)
Film photo

[Isochrom 18°Din](#)
Film photo

[Isopan 127](#)
Film photo

[Isopan IF](#)



[PAN 116](#)
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[Agfachrome 200 RS](#)
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[Agfacolor CNS 2](#)
Film photo

[Agfacolor N 80 L](#)
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[Agfapan 400 Professional Minox](#)
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[Agfapan Vario XL Professional](#)
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[Color XR 100i](#)
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[CT 18](#)
Film photo

[Isochrom](#)
Film photo

[Isopan](#)
Film photo

[Isopan F](#)
Film photo

[Isopan IF Rapid](#)

Other Calculators

APF



Mark 26



Mark 50



Mark 55



Mark 56



Mark 68R

ASA



SC-31

Aurex



B-5020



B-5300



B-9641



EDC-4300



SC-108i (blue)

Aurora



AC304



HC122 "RAYOVAC"



SC190

Bohsei



3000

Bowmar



MX-100



MX-120



MX-61

Boyd



JOBBER II

Brother



418E

Btech



Siemens Nixdorf

Welcome to the Siemens Nixdorf Homepage on MacDat!

Siemens Nixdorf was a German technology company, formed as a merger of Nixdorf Computer and the Data Information Services division of Siemens. The company operated under Siemens until 1999, when it was split into two companies - Wincor Nixdorf for their banking and retail divisions, and Fujitsu Siemens Computers for the PC division.

Siemens Nixdorf notebooks were mainly sold in Europe, although they also made it into Australia. They were never sold in the United States. Their laptops are known for their distinctive mint green color scheme. Most or all of their laptops were manufactured by Quanta in Taiwan, although most were fully custom designs which were only sold by Siemens Nixdorf.

Own a Siemens Nixdorf laptop? I'm in need of information on many models, along with images. See this page for info on how to reach me.

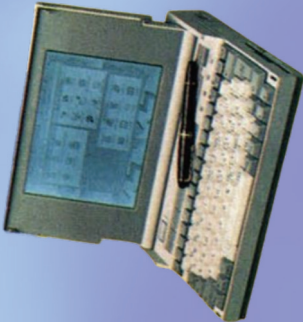
Siemens Nixdorf
Informationssysteme AG

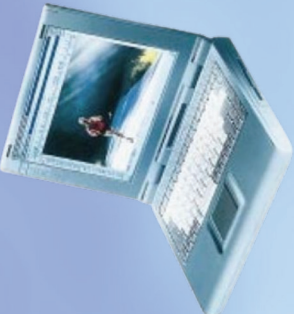
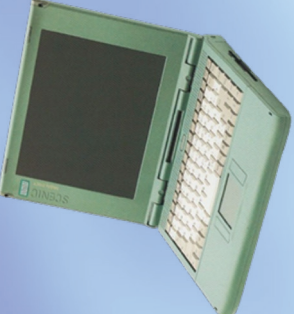
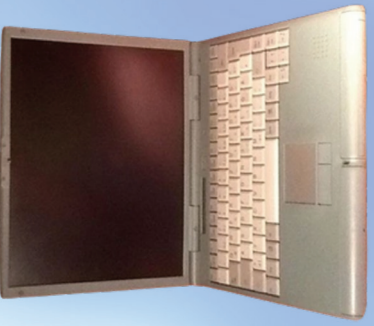
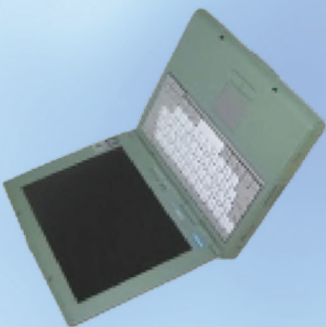


Country: Germany
Industry: Desktop & Notebook computers, Servers
Founded: 1990
Defunct: 1999
Fate: Split into Fujitsu Siemens Computers & Wincor Nixdorf
Website: sni.de

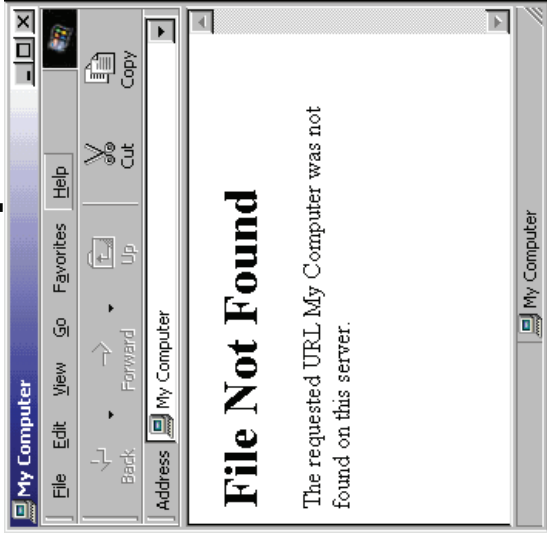
Model List of Siemens Nixdorf laptops (incomplete)

This list includes SCENIC Mobile models released by Fujitsu Siemens.

	No Image Siemens Nixdorf PCD-3NsI Released: 1992		
Released: 1992?		Released: 1994	Released: 1994
		Siemens Nixdorf PCD-5ND	Siemens Nixdorf SCENIC Mobile 500
			
		Siemens Nixdorf PCD-4ND	

Released: 1995	Released: 1995	Released: 1995	Released: 1996
<u>Siemens Nixdorf PC4-4NL</u>	<u>Siemens Nixdorf SCENIC Mobile 300</u>	<u>Siemens Nixdorf SCENIC Mobile 310</u>	<u>Siemens Nixdorf SCENIC Mobile 320</u>
Released: 1995	Released: 1997?	Released: 1997	Released: 1997
			
<u>Siemens Nixdorf SCENIC Mobile 700</u>	<u>Siemens Nixdorf SCENIC Mobile 710</u>	<u>Siemens Nixdorf SCENIC Mobile 800</u>	<u>Fujitsu Siemens SCENIC Mobile 510 AGP</u>
Released: 1996	Released: 1997	Released: 1998	Released: 1998
			
<u>Fujitsu Siemens SCENIC Mobile 350</u>	<u>Fujitsu Siemens SCENIC Mobile 750</u>	<u>Fujitsu Siemens SCENIC Mobile 360</u>	<u>Fujitsu Siemens SCENIC Mobile 800 AGP</u>
Released: October 1998	Released: October 1998	Released: 1999	Released: 1999?
			

New Internet Explorer Errors



This page contains anti-Microsoft content

The loading of the page has been stopped. Your attempt to access this page has been logged to www.microsoft.com.



GAME OVER

Insert quarter to browse the Internet.



This page can not be loaded

This page could not be loaded because the server is running a non-Microsoft operating system or web server. Please contact the server's administrator and have them upgrade to Microsoft Windows with Microsoft Internet Information Server.



MSHTTP Error - 770 Brain not found



No error occurred, but we detected that you have Netscape Navigator on your computer. It is just wasting hard drive space and it must be confusing having two different browsers that work differently, so you might want to take this opportunity to uninstall Netscape Navigator now.



Integration error

Microsoft's screwup is now in every application.



The Java applet you attempted to run is written in platform independent Java. Microsoft Internet Explorer can not run this type of java. Contact the server's administrator and have them re-write the applet to run only in Internet Explorer.



License error

You have violated the Internet Explorer license agreement. Bill Gates will be by later on this evening to collect your soul.



The page you attempted to access contained information that Microsoft has deemed inappropriate. Because the server is running MS IIS, the page has been deleted automatically. The police have been notified and will arrest the server's administrator shortly.



MSHTTP Error 666 - BiLL GaTeZ RuLeZ!



The page you are attempting to access requires a valid user ID, password, approval from your boss, your bosses boss, your mother, a copy of your drivers license, a copy of your birth certificate, approval from Bill Gates, and approval from the weird guy at your local hardware store.



Microsoft Internet Explorer has automatically scanned the installed components on your hard drive and has determined that you have not paid for the following Microsoft products: Microsoft Windows 98, Microsoft Flight Simulator, Microsoft Visual Studio 6, and Microsoft Office Professional. You have automatically been sentenced to 6 years in prison. You will be apprehended shortly. Have a nice day!



Virus detection error

A virus scanner is attempting to disable Internet Explorer because it thinks Internet Explorer is a virus. Please disable this scanner. Internet Explorer is not, I repeat is not a virus. Really, trust us... it isn't.



Microsoft Internet Explorer has detected a personality conflict between the Office Assistant and Microsoft BOB. Please use active update to update to the latest version of EGO32.DLL.



The MS IIS server you are trying to access is currently rebooting. This is normal behavior. Please stand by.



Corrupt system error

Although your system was working fine, there is a newer version of Windows available. Internet Explorer will now begin to sabotage your system so parts will not work right until you buy the Windows upgrade to "fix" these problems.



MSHTTP Error ID10T

Please step away from your computer and do not touch it again until you have read the manual.



There is a newer version of Microsoft Internet Explorer available. You must download all 165 megs of it over your 14.4 modem now.



The page you attempted to access contains advertising for a product that is in competition with Microsoft. Since Microsoft makes the best products in the universe there is no point displaying this page. You might instead want to visit www.microsoft.com and download some of our free products and demos.



MSHTTP Error 123: Does your mother know you are looking at pages like this?

Well, she does now.



MSHTTP Error 1984: The site you attempted to access: www.netscape.com does not exist.

It never did. Any rumors that it may have are lies.



The content of this page can not be displayed

It contains non-Microsoft specific HTML codes that Microsoft Internet Explorer does not and will not support. Please contact the servers administrator and have them re-write the page to Microsoft HTML specifications.

STUPID WEB PAGES:

I have seen a number of sites (or have been denied from seeing them) that claim to require the Microsoft Internet Explorer web browser application software to view them. I have taken the liberty of translating some of the messages I have seen to expose their true meaning:

We are (not really) sorry, our page only works in IE 5.0 or higher.

This web page requires IE 6 or higher because MS paid us a lot of money.

This page is best experienced in MSIE 5.5. We will give you an electric shock each time you visit our page with any other web browser. Why? Because we hate you.

The site is best viewed in Internet Explorer because I am too lazy to test it in anything else. This site has been visited by 0041748 people I don't care about

This page requires IE because it uses Active X controls because we follow in the steps of the almighty Bill Gates.

Baw, you need a Microsoft Browser to see my pukey page!

This site is designed to work exclusively in MSIE 4 and higher. MSIE is the standard web browser. ("Standard" meaning a mandatory requirement that we will shove down your throat). Failure to use the browser we dictate will result in painful death.

This page is specifically designed for the broken functionality of Microsoft Internet Explorer. We can not be bothered to validate our HTML or look at the page in another browser.

This site only looks right in IE 5.5 SP2, at 800*600 resolution with 24bit color using a full size window, and the default toolbars all showing. The Verdana and Georgia fonts must be present. Your browser font size must be set to medium. Your windows appearance settings must be set to "Windows default". The wind must be blowing from the south.

This page ONLY works in IE 5.01. (Although it actually works in anything, I just like IE 5.01 for some reason... mmmm.... Bill is my master ...)

The CrapyCrapCor home page is best viewed on my computer with my IE because I can't grasp the concept that a web page looks slightly different on every single computer.

This page is best viewed in IE 4. Unless you don't like the stupid IE tricks we use on this page.

 We only support Microsoft Internet Explorer. We are such a bunch of jerks we think we can make the rest of the world use the same thing we do by refusing access to our site to those who choose to use other web browsers.

Really! Our page isn't broken.... it's advaaanced. Get IE 6 or else.

We here never heard of no Ohpra browser or Net-escape. We dun use that Innernet Explorer thing. Meby you shud use that.

 Well, this site probably only looks right in MSIE 4.01 because I am

actually being held hostage by the IT department here and that is all those bastards gave me to use. HELP! -->

This page requires IE 6, and therefore will not work on Windows 95!

Hey look at us! We are completely denying access to everything other than IE 5 because one little table on our site is slightly out of alignment on other browsers!

This page works best if you have MSIE 6, Windows XP, Office XP, and all of the other latest Microsoft products because Microsoft is good.



Microsoft Internet Explorer not found.

Bill, Bill, Bill... We love Bill. You need Bill to see our page. You will love Bill too. Bill is wonderful.

Business?! Weeeee don't need no stinkin' business from any Mozilla user!

STOP! You must have Microsoft Internet Explorer to view this page. We have done all kinds of retarded non-standard IE only tricks just to be cool. And to piss you off.

This page is written using Microsoft Front Page so it only looks right in MSIE. Please have mercy and shoot me.

Infidel! You have not conformed to the great Microsoft way! Download Microsoft Internet Explorer at once and rejoice in the glory that is Microsoft! Hail Bill Gates!

A Netscape user!? We don't want your kind here because we are a bunch of fucking browser bigots. Go away.

This site is best viewed with Idiot Exploiter and we are going to pop this message up on each page to make you feel like you are an idiot for using that non-MS browser. Long live the Microsoft Empire!

This web site is designed for Internut Explorer - It's not even vaguely valid HTML!

This site was proudly designed in Micfort Runtpage AKA The HTML Cuizinart - good luck viewing our page with anything other than IE! Or even WITH IE for that matter!

If you can read this then you are already using MSIE because this page freaking crashes other browsers.

SITE POLICY:

Our site policy requires you to use MSIE 5.0 or later to view our site. Failure to comply with this policy is punishable by up to 5 years in prison.

WARNING! We have detected that you are using a NETSCAPE browser im going to be a complete shit and yell and scream and not let you view this site because I'm

THE RHETORIC DISKS

All disks compiled by S.D Marshall, Rhetoric Software.

(except Disk #7 features *VIP demo by DBug, Twilightte, Jede.*)



Free download for personal use.

Rhetoric disks are copyright Rhetoric Software. Copyright of individual programs (may) apply.

RHETORIC DISK 1

On the first disk we went for using 'modern advances' and made use of samples to introduce the disk. Jonathan 'Twilightte' Bristow was very enthusiastic about Rhetoric and wrote an excellent menu system to introduce the disk in style. (Use cursor keys and space bar) He incorporated the sample I selected, converting it to a 4-bit sample. The sample was from a collection by Stephen Meachen taken from the film 'The Mask'.

The menu included a couple of programs/ pieces of coding which were used to insert the loading instructions. These programs were not included on the finalised disk so that the menu would be exclusive to Rhetoric disks.

FEATURED PROGRAMS

LOCH NESS MONSTER - arcade game - rare Atmos version
DON'T PRESS THE LETTER 'Q' - classic arcade action
SCUBA DIVE - Atmos version of this arcade game
WHOOPS! - previously unreleased kids game
CRABES - French type-in
GOLDEN BATON - graphics/text adventure game
COLOUR CHART - graphics demo/utility
POPCORN - music demo by Muso (made with Sonix)
YOGI - a HIRES screen from Cybojudge
PARALAX SCROLL - scroller demo
CHESS SCROLL - another scroll demo

RHETORIC DISK 2

Using the same menu system as before we have another collection of programs. I tried to include an Atmos or disk version of a software that was only previously available on tape, some classics, an adventure game, a type-in and something new.

TYRANT - A rare game produced by the Your Oric magazine team
THE HELLION - classic arcade shoot 'em up
DON'T PANIC - A modern classic unique to the Oric
ORIC MUNCH - Pacman fun from Tansoft
COCK 'IN - An unusual French game - One of my favourites
ARROW OF DEATH PT1 - Text adventure continuing on from Golden Baton
ARROW OF DEATH PT2 - The next in the adventure series
MIRAGE SCREEN - HIRES screen for OUM/ Mirage made for Cybojudge but unreleased
ORIC LOGO - A nice screen from Twilightte made for Rhetoric
BAR BLASTER - Rare cassette converted to disk
HUBBARD MUSIC - Famous conversion of Ron Hubbard's music to the Oric
SCROLLER L - a scroller demo/ example program





RHETORIC DISK 3

The menu system had been causing me lots of problems due to some restrictions. I couldn't change the sample and had to write extra code if I needed to use a QUIT command.

Reluctantly I decided to opt for an easier to use menu that featured on OUM disks. Future disks would have a different sample on boot-up.

Cybojudge appeared on the disk in order to correspond with my articles on program writing, (and demonstrate how not to do it!).

MR WIMPY - Challenging arcade fast food game

MAZE RALLY - Classic car/ maze game

LEAGUE SOCCER - An updated version of the OUM title

TIC TAC - Brian Kidd's favourite - a nice puzzler

HEXPLODE - A rare strategy game of unknown origin !

LEOPARD LORD - Rare text adventure

GRAPHICS DEMO - Fabrice Frances produces soem colour

FRAGG CHASE - Another rare game - run away !

CYBOJUDGE - My unreleased version

CYBOJUDGE - Laurent's rewrite for CEO

CHARACTER CODE - Simple utility by Frank Bolton

MY LESSON- Another of Frank's educational programs

NOWOTNIKPUZZLE - Tansoft's classic puzzle game

TETRIS - Not so well known in the UK, CEO's version by Daniel Duffau

RHETORIC DISK 4



The fourth disk meant we had made it through one year of publication. I was pleased that I'd managed to keep the disks on time. The disks sold well and the only complaint was that it was mainly games on the disk. My aim, (see disk 2) was to provide a mixture of old and new, which I think I achieved, and most people were wanting games. I tried to include some form of utility or demo program code on each disk too.

People were invited to request specific programs for inclusion on the disks but it was really down to me to see what I could find.

KRAZY APE - One of the better type-in's

HOUSE OF DEATH - Tansoft's

DON'T PANIC - A modern classic unique to the Oric

ORIC MUNCH - Pacman fun from Tansoft

COCK 'IN - An unusual French game - One of my favourites

ARROW OF DEATH PT1 - Text adventure continuing on from Golden Baton

ARROW OF DEATH PT2 - The next in the adventure series

MIRAGE SCREEN - HIRES screen for OUM/ Mirage made for Cybojudge but unreleased

ORIC LOGO - A nice screen from Twilight made for Rhetoric

BAR BLASTER - Rare cassette converted to disk

HUBBARD MUSIC - Famous conversion of Ron Hubbard's music to the Oric

SCROLLER L - a scroller demo/ example program

SCROLLER R - a scrollerdemo/ example program

Zurück in das Hauptmenü

Sanyo Laser 210

Wie sein Vorläufer, der Laser 110 wurde auch dieses Modell mit einer Gummitastatur ausgeliefert, der Arbeitsspeicher wurde ab Werk auf 8 KByte erhöht. Nachbau des Laser 210 aus dem Hause VTech.

- Klassifizierung : 8-Bit non CP/M System
- Markteinführung : 1984
- Hauptprozessor : Zilog Z80A
- Taktfrequenz : 3,25 MHz
- Hauptspeicher : 8 KByte
- Max. Hauptspeicher : 64 KByte
- ROM Größe : 16 KByte
- Massespeicher : 5,25" FDD mit 80 KB Kap., Datasette (600 Baud Geschw.)
- Grafikauflösung (max.) : 128x64 Pixel bei 2/8 Farben, 64x32 Zeichen bei 9 Farben
- Grafikausgabe : Monitor, TV
- Soundausgabe : Monophoner Synthesizer über 4 Oktaven
- Softwareangebot : gering
- heutiger Straßenpreis : k.A.

Sanyo Laser 310

Nachbau des Laser 310 aus dem Hause VTech. Das Folgemodell des 210 wurde lediglich in einigen Details verändert. Das Gehäuse ist baugleich mit dem Modell 350. Neben dem im ROM fest verankertem Microsoft Basic V2.0 standen Assembler und Forth als alternative Programmiersprachen zur Verfügung. Neben dem Monitor- und Cassettenausgang befinden sich auf der Rückseite des Geräts ein Expansionsport und ein TV-Anschluss.

- Klassifizierung : 8-Bit non CP/M System
- Markteinführung : 1984
- Hauptprozessor : Zilog Z80A
- Taktfrequenz : 3,8 MHz
- Hauptspeicher : 16 KByte
- Max. Hauptspeicher : 64 KByte
- ROM Größe : 16 KByte
- Massespeicher : 5,25" FDD mit 80 KB Kap., Datasette (600 Baud Geschw.)
- Grafikauflösung (max.) : 128x64 Pixel bei 2/8 Farben, 64x32 Zeichen bei 9 Farben
- Grafikausgabe : Monitor, TV
- Soundausgabe : Monophoner Synthesizer über 4 Oktaven
- Softwareangebot : gering
- heutiger Straßenpreis : k.A.

Sanyo Laser 350

Der Sanyo Laser 350 ist ein Nachbau des VTech Laser 350.Das Modell 350 ist kompatibel zu den Modellen 500 und 700 aus dem Hause VTech. Ob es sich nun um ein CP/M taugliches Modell handelt bleibt fraglich. Wie bei nahezu allen Homecomputern dieser Zeit befindet sich ein Microsoft Basic im ROM des Rechners. Laut J.Groener ist ein Grafikbetrieb von 640x192 Pixel in 8 Farben mit Zusatzhardware möglich.

- Klassifizierung : 8-Bit System
- Markteinführung : 1985
- Hauptprozessor : Zilog Z80A
- Taktfrequenz : 3,7 MHz
- Hauptspeicher : 16 KByte
- Max. Hauptspeicher : 144 KByte
- ROM Größe : 32 KByte
- Massespeicher : 5,25" FDD, Datasette (600 Baud Geschw.)
- Grafikauflösung (max.) : 320x192 Pixel bei 2/16 Farben, 80x24 Zeichen bei 16 Farben
- Grafikausgabe : Monitor, TV
- Soundausgabe : Monophoner Synthesizer
- Softwareangebot : gering
- heutiger Straßenpreis : k.A.

Sanyo Laser 500

Nachfolgemodell des Laser 350. Nachbau des VTech Laser 500. Ob es sich nun um ein CP/M taugliches Modell handelt bleibt fraglich. Wie bei nahezu allen Homecomputern dieser Zeit befindet sich ein Microsoft Basic im ROM des Rechners.

Klassifizierung Markteinführung Hauptprozessor Taktfrequenz Hauptspeicher Max. Hauptspeicher ROM Größe Massespeicher Grafikauflösung (max.) Grafikausgabe Soundausgabe Softwareangebot heutiger Straßenpreis Informationsquelle : 8-Bit System : 1985 : Zilog Z80A : 3,7 MHz : 16 KByte : 144 KByte : 32 KByte : 5.25" FDD, Datasette (600 Baud Geschw.) : 320x192 Pixel bei 2/16 Farben, 80x24 Zeichen bei 16 Farben : Monitor, TV : Monophoner Synthesizer : gering : k.A. : J.Groener's Computerarchiv

Sanyo Laser 700
Nachfolgemodell des Laser 500. Nachbau des VTech Laser 700. Ob es sich nun um ein CP/M taugliches Modell handelt bleibt fraglich. Wie bei nahezu allen Homecomputern dieser Zeit befindet sich ein Microsoft Basic im ROM des Rechners. Die Unterschiede zwischen den Modellen 500 und 700 sind leider nicht ersichtlich. Klassifizierung Markteinführung Hauptprozessor Taktfrequenz Hauptspeicher Max. Hauptspeicher ROM Größe Massespeicher Grafikauflösung (max.) Grafikausgabe Soundausgabe Softwareangebot heutiger Straßenpreis Informationsquelle : 8-Bit System : 1985 : Zilog Z80A : 3.7 MHz : 16 KByte : 144 KByte : 32 KByte : 5.25" FDD, Datasette (600 Baud Geschw.) : 320x192 Pixel bei 2/16 Farben, 80x24 Zeichen bei 16 Farben : Monitor, TV : Monophoner Synthesizer : gering : k.A. : J.Groener's Computerarchiv

Sanyo Laser 2001
Das Modell 2001 ist ein MSX1 kompatibles System. Weitere Informationen bei unter MSX. Klassifizierung Markteinführung Hauptprozessor Taktfrequenz Hauptspeicher Max. Hauptspeicher ROM Größe Massespeicher Grafikauflösung (max.) Grafikausgabe Soundausgabe Softwareangebot heutiger Straßenpreis : 8-Bit non CP/M System : 1984 (im Juni 1983 bereits angekündigt) : MOS 6502A : 2 MHz : 32 KByte : 64 KByte : 16 KByte : FDD 5.25" mit 128 KByte, Datasette (600 Baud Geschw.) : 256x192 Pixel im Grafikmodus mit 16 Farben, 36x24 Zeichen im Textm. : Monitor, TV : Quadrophoner Soundchip über 4 Oktaven : gering – mittel MSX : k.A.

Sanyo MBC 1150
Das Modell MBC 1150 ist ein klassischer Vertreter der CP/M Generation. Klassifizierung Markteinführung Hauptprozessor Taktfrequenz Hauptspeicher ROM Größe Massespeicher Grafikauflösung (max.) Grafikausgabe Softwareangebot : 8-bit CP/M 2.2 System : 1984 : Zilog Z80A : 4 MHz : 64 KByte : 8 KByte : 2x5.25" Diskettenlaufwerke mit 360 KByte Kapazität, optionale 8 MByte HDD : 80x25 Zeichen im Textmodus, monochrom : integrierter 12" Grünmonitor : mittel

Bugs, Undocumented and Interesting Features of Soviet Calculators

Author: Sergei Frolov. *Please return to me this page with corrections of English grammar.*

E-mail: frs@overlink.ru

On this page you find out about the undocumented and interesting features of soviet calculators. The materials of this page are prepared on the basis of clauses from popular magazines, and also proceeding from personal experience of the author of clause. If you know something else, please, send materials to me.

It is forbidden to use materials of this clause in any purposes without the coordination with the author.

Epos 73A , B3-26 , B3-24G , MK-26 , MK-57 , MK-57A , MK-57b	B3-21 , MK-46 , MK-47 , MK-64 , MC 1103	C3-22	B3-34 , MK-54 , MK-56 , MK-61 , MK-52
MK-71	B3-35 , B3-36 , MK-35 , MK-36 , MK-66	MK-85, MK-85M	24-71 , C3-22 , MK-22 , C3-33 , MK-33 , MK-42

[B3-26](#), [B3-24](#), [B3-24G](#), [MK-57](#), [MK-57A](#)

Bug	All these calculators are assembled on the same chip. In these calculators function of square root from a negative number does not cause an error. Instead of an error on the indicator the result of the function is output.
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[C3-22](#)

Hidden	At pressing simultaneously keys "CP" (clear memory) and "Cx" in the calculator the not documented character  (blank) is entered. This character is equal to digit 15. If from the gated in character to subtract 1, it is possible to receive the not documentary characters appropriate to numbers from 10 up to 15:  (10),  (11),  (12),  (13),  (14),  (15).
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[B3-21](#), [MK-46](#), [MK-47](#), [MK-64](#), [MC 1103](#)

	In this calculator there is one specific function named  (e^x). After executing this function the register Y stores value of SIN X, and the register X stores value of COS X. Perform of division function cause to calculate Tangent of number.
Features	At reading a command of check of a condition  or  contents  in register X are perceived by the managing device as a negative number. As the representation -0 can appear only after performance of the operator of change of a mark  , it is necessary to avoid input of this operator before the operators of transition on a condition.
	In calculators of early issues the following bugs are observed: At addition of number containing in a mantissa seven "9" and more of four units in eighth (undisplayed) for fractional mantissas the digit, and greater on exponent there is a bug. For check of the calculator it is necessary to combine 9.9999999 and 10. If the result is equal 120, at calculations it is necessary to take into account this feature.
	At execution of single operators of calculation of elementary functions and operator  in the digits of one of the registers (which number depends on a kind of function and values of argument) of the ring stack of numerical memory the signal of overflow is brought, that results to errors at use of this register for a storage of operands. For check of the calculator it is necessary to clear memory, by switching off a power, and after inclusion of a power to press keys     . If displaying a zero, the calculator is free from a examined lack, otherwise displaying:  at function evaluation between calling to stack it is necessary to take into account it overflow the registers or not use has flown down memories.
Bugs	The transition to the subroutine is not carried out, if the code of a command BP is brought in a cell of program memory with the address 55, 65, 70, 80, 91 and 92, and the operator is carried out, which

(Note that: [Painting Valley blog](#) has translated this time-line to [Russian](#), for the convenience of Russian speakers. The site [vectorified.com/](#) has a translation of this time-line into [Uzbek](#), for the convenience of Uzbek speakers.)

Chronology of calculator developments			
Year	Major Development	Mechanical Calculators	Electronic Calculators
Ancient times		The abacus is the main aid to calculation.	
c1600		"Napier's bones" invented by John Napier for multiplication, based on the ancient numerical scheme known as the Arabian lattice.	
1620	Slide rule.	William Gunter developed a logarithmic rule for multiplication and division using dividers, which was the forerunner of the slide rule.	
1622		William Oughtred invented the circular slide rule, and in 1633 described the rectilinear version.	
1623	First mechanical calculator.	Willhelm Schickard invented the "Calculating Clock", the first mechanical calculator. It used a version of Napier's bones for multiplication with a mechanical adding/subtracting calculator based on gears, with mutilated gears for carry.	
1642		Blaise Pascal started to develop a mechanical calculator - the Pascaline. Capable of addition, subtraction was performed by nines-complement addition, and multiplication was performed by repeated additions and subtractions. It had shortcomings and failed to sell.	
c1673		Gottfried Leibniz developed the Stepped Reckoner using stepped gear wheels. Performed the 4 functions, but worked erratically due to an error in the carry mechanism, none sold.	
1820		Charles Xavier Thomas's Arithmometer.	
1851		Victor Schilt exhibited a key-driven adding machine at the Crystal Palace Exposition in London.	
1853		The Scheutz Difference Engine completed: the world's first printing calculator.	
1872	Start of period of development of commercially successful mechanical calculators.	Frank Baldwin in the USA invents the pin-wheel calculator.	
1874		W.T. Odhner in Sweden independently develops the pin-wheel calculator, the first of the long series of Odhner calculators  . Since then, many	

		calculating machines have used the same principle.	
1878		The first direct multiplication machine was built by Raymond Verec.	
1884		Dorr E. Felt invents the Comptometer , the first successful key-driven adding and calculating machine. In 1886 he joined with Robert Tarrant to form the Felt & Tarrant Manufacturing Company which went on to make thousands of Comptometers.	
1891		William S. Burroughs began commercial manufacture of his printing adding calculator.	
1893		The Millionaire calculator introduced. It allowed direct multiplication by any digit - "one turn of the crank for each figure in the multiplier".	
1902		The Dalton adding-listing machine was the first of its type to use only ten keys - first 10-key add-lister.	
1900 - 1975	Steady development of mechanical calculators - size reduction, electric motor drive, added features (eg. automatic multiplication & division).	Madas 20AZS , a typical electrically driven, stepped-gear calculator with automatic multiplication and division.	
1948		Curta miniature hand-held mechanical calculator introduced. One of the few major innovations in mechanical calculators in the mid 20th century.	
1961	The first electronic desktop calculators. They use vacuum tubes.		The world's first electronic desktop calculators were announced by the Bell Punch Co., Uxbridge, England - the Anita Mk VII for the continental European market and the Anita Mk 8 for other markets. These models used cold - cathode vacuum tubes and numerical display ("Nixie" type) tubes.
1962	Development work on transistorised desktop calculators.		The Philips company shows prototype 3-function (no division) transistor desk calculator and electronic "Comptometer" type machines . These were to demonstrate what could be achieved with Philips semiconductors and were not sold commercially.
1963 - 1964	First commercial transistorised desktop calculators.		First commercial all-transistor desktop calculators: Friden EC130 & EC132 Mathatron, IME 84

combined timeline

- 1962
 - Oct Douglas Engelbart writes a proposal called "Augmenting Human Intellect: A conceptual framework"
- 1963
 - A Ph.D. thesis describing Sketchpad is defended by Ivan Sutherland
- 1968
 - Douglas Engelbart demos oNLine System at the Fall Joint Computer Conference in San Francisco
- 1970
 - Douglas Engelbart receives a patent for a computer mouse
- 1979
 - 30 Jul The Lisa project begins
- 1980
 - Psion Software is founded
 - Mar Lisa project changes directions, including many features from Xerox Alto
- 1981
 - Apollo Computer releases the DN100 workstation with a proprietary GUI
 - QUNIX is released
 - Xerox 8010 Star is released
- 1982
 - Nov Visi On is demoed at COMDEX trade show
- 1983
 - 19 Jan Lisa Office System 1 is released
 - Lisa Office System 2 is released
 - Oct Visi On is released
 - 10 Nov Windows 1.0 is announced
- 1984
 - QNX 1.0 is released
 - Lisa Office System 7/7 3 is released
 - IRIX 1.0 is released
 - 24 Jan System 1 is released
 - May X Window System 1 is released
- 1985
 - NeXT, Inc. is founded
 - MouseDesk/DeskTop is released

	<u>MouseDesk/DeskTop</u> is released
	<u>GEM</u> is released
	<u>ViewPoint 1.0</u> is released
	<u>TOS 1.0</u> is released
	<u>Macintosh XL (Lisa)</u> is discontinued
29 Apr	<u>Workbench 1.0</u> is released
Sep	<u>Windows 1.0</u> is released
20 Oct	<u>X Window System 9</u> is released
	<u>X Window System 10</u> is released
	<u>IRIX 2.0</u> is released
	<u>IRIX 3.0</u> is released
Jan	<u>System 3</u> is released
Mar	<u>GEOS for Commodore</u> is released
24 Mar	<u>GEM/2</u> is released
1987	
	<u>GS/OS</u> is released
	<u>QNX 2.0</u> is released
	<u>ArthurOS</u> is released
Mar	<u>System 4</u> is released
15 Sep	<u>X Window System 11</u> is released
9 Dec	<u>Windows 2.0</u> is released
1988	
	<u>GEOS for Apple II</u> is released
	<u>GEM/3</u> is released
	<u>GEM/5</u> is released
Apr	<u>AT&T announces OPEN LOOK</u>
Jun	<u>System 6</u> is released
12 Oct	<u>NeXTSTEP 0.8</u> is released
31 Oct	<u>OS/2 1.10</u> is released
1989	
	<u>OSF/Motif</u> is released by Open Software Foundation
	<u>NewWave 1.0</u> is released
	<u>ViewPoint 2.0</u> is released
Apr	<u>OPEN LOOK 1.0</u> is released
	<u>RISC OS 2</u> is released
Sep	<u>EPOC/16 (SIBO)</u> is released
18 Sep	<u>NeXTSTEP 1.0</u> is released
Oct	<u>OS/2 1.20</u> is released
	<u>NewWave 2.0</u> is released
	Be, Inc. founded by Jean-Louis Gassée of Apple's fame

New York Broadcasting History Board

Your Comments on New York Radio History

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[\[Rewound Radio\]](#)

[\[NYBHB.com\]](#)

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Hacks

Tips, tricks, hacks and modifications for old computers... and not only for old computers, DIY stuff, all things which can't be fit to single computer's chapter in Collection section.

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	A cumulative list of things to 3D print NEW
	Fixing monochrome/grayscale picture on early VGA boards with new monitors or KVM stiwch NEW
	List of these retro-looking icons on this site
	Building a PS/2 keyboard, mouse and joystick converter for Atari Mega
	Sony Trinitron CRT Monitor service set-up
	Making a small HI/LO LED display for PC casings without one.
	Benchmarking performance of 8-bit computers
	Chord keypad in tasks automation
	Restoration and discovering of an unknown old computer
	DIY book scanner - quick-and-dirty way
	Reverse engineering of TRANSLED driver's signals
	Eizo FlexScan 13W3 connector and maintenance cable
	Adding sound switching to 2-port KVM
	ThinkPad 760 and larger hard drives
	Flashing BIOS in old IBM ThinkPads with battery not fully charged
	UCart for C64 with menu.

All my content and photos



BEST VIEWED WITH
ANY BROWSER
COOKIE-FREE, JS-FREE

	Reworking PC Floppy Disk Drive to use in Schneider Euro PC II
	Asus Notebook Multimedia Key problem (Windows Media player/InstantFun launches) workaround
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	Living with Windows 95
	Importing files to SDLTRS in windows - this method works!
	Replacing broken hinge in Asus F5 (F5M) notebook computer
	Adding more than 2 hard drives in 2/386 computers.
	Installing an EPROM in ZX Spectrum
	Save RAM drive memory in HP 200LX by temporary placing its locale kit files
	Deleting undeletable icons in HP 200LX System Manager
	Polish fonts in HP 200LX Vertical Reader and HTMLView (60kB ZIP file)
	Adding 64K of memory to Commodore 16
	Making a ZX Spectrum keyboard membrane
	Re-formatting a HP 200LX memory card to make small files even smaller
	Commodore 64 bad power supply protector - external version
	Raritan CCP-06 cable to ATEN MasterView CS-128 KVM converter
	Numeric keypad to Commodore 64 - the most simple version
	IP Network printer in Windows 95
	Universal mouse - for Atari ST, Amiga, pre-ADB Macs, PC (bus/InPort mouse) and many other
	UCR-61 / UCR 61S / UCR-61S2B Card Reader mod - to make it work with all mobos, LED mod

I take no responsibility for any damages caused by these mods, but I tried them and they should work fine. I'm not publishing anything I haven't tried in practice. And sorry for my English ;).

8 pin RJ45 (8P8C) female connector layout
8 pin RJ45 (8P8C) female connector
at the device



Ethernet RJ45 connection wiring and cable pinout

Ask a question Comment Edit Submit New

Nowdays ethernet is a most common networking standard for LAN (local area network) communication. The ethernet cable used to wire a RJ45 connector of network interface card to a hub, switch or network outlet. The cable is called **wipe, patch cord, straight-thru cable**.

There are several specifications of Ethernet RJ-45 connection over twisted pair: oldest 10Mbit (Ethernet), old but still used 100Mbit (Fast Ethernet), modern 1Gbit (Gigabit ethernet) or newest 10Gbit ethernet. Ethernet cable wiring for any of those RJ45 interfaces may be easily crimped by yourself.

Ethernet is officially standardized by IEEE standard 802.3. It was originally developed by Xerox Corporation in cooperation with DEC and Intel in 1976. Nowadays ethernet over twisted pair (RJ-45 connection) runs at 10Mb, 100Mb, 1Gb or 10Gb per second. Ethernet uses a bus (very old coaxial cable) or star topology (standard UTP cable equipped with RJ-45 connectors).

Ethernet RJ45 connection and cable

Almost every ethernet network use Unshielded Twisted Pair (UTP) cable ended with RJ-45 connectors. Category 5 (CAT5), Category 5e or Category 6 (CAT6) cables are widely used, but other variations are available. EIA/TIA specifies RJ-45 connectors - properly called 8P8C - (ISO 8877) for UTP (unshielded twisted pair) cable.

Fast Ethernet

100BASE-TX (IEEE 802.3u) was introduced in 1995 and remained the fastest version of Ethernet before the introduction of Gigabit Ethernet. It runs on UTP data or optical fiber cable in a star wired bus topology, similar to 10BASE-T where all cables are attached to a hub. Fast Ethernet RJ-45 connected devices are generally backward compatible with existing 10BASE-T systems. The segment length for a 100BASE-T cable is limited to 100 metres. 100BASE-TX runs over two wire-pairs inside a Category 5 cable or above. Like 10BASE-T, the active pairs in a standard connection are terminated on pins 1, 2, 3 and 6.

Gigabit Ethernet

1000BASE-T (also known as IEEE 802.3ab) is a standard for Gigabit Ethernet over copper wiring. The Gigabit RJ45 connection requires, at least Category 5 cable (the same as 100BASE-TX), but Category 5e cable (Category 5 enhanced) or Category 6 cable may also be used and is often recommended. 1000BASE-T requires all four pairs to be present and is far less tolerant of poorly installed wiring than 100BASE-TX.

10Gbit Ethernet

10GBASE-T (IEEE 802.3an-2006) is a standard released in 2006 to provide 10 Gbit/s connections over unshielded or shielded twisted pair cables, over distances up to 100 metres. Category 6a cable is required to reach the full distance and category 6 may reach a distance of 55 metres. The line encoding used by 10GBASE-T is the basis for the slower 2.5GBASE-T and 5GBASE-T standard, implementing a 2.5 or 5.0 Gbit/s connection over existing category 5e or 6 cabling. Cables which will not function reliably with 10GBASE-T may successfully operate with 2.5GBASE-T or 5GBASE-T if supported by both ends.

RJ45 ethernet connection pinout

There are two standards for RJ45 cable wiring: EIA/TIA 568A and EIA/TIA 568B. Both are correct. You may use either of them to crimp the Ethernet RJ45 net connection cable.

EIA/TIA 568A Ethernet UTP cable wiring diagram

Pin	Signal Name	Description	cable wire color	Name	Pin
1	TX+ D1	Transmit Data+	White with green strip	TX+ D1	1
2	TX- D1	Transmit Data-	Green with white stripe or solid green	TX- D1	2
3	RX+ D2	Receive Data+	White with orange stripe	RX+ D2	3

https://pinoutguide.com/NetworkCables/ethernet_10_100_1000_pinout.shtml

8 pin RJ45 (8P8C) male connector layout
8 pin RJ45 (8P8C) male connector
at the ethernet cable



Pinout status: +53 -2

According to 63 reports in our database (53 positive and 2 negative) the Ethernet RJ45 connection wiring and cable pinout should be correct.

Is this pinout correct



4 Related pinout(s)

- Ethernet 10 / 100 Mbit (RJ45 cat 5) network cable wiring pinout
- Ethernet 10/100/1000 Mbit crossover cable pinout
- Ethernet 10/100Base-T (RJ-45) connector pinout
- Ethernet 1000Base-T (Gigabit ethernet) pinout

NO DIY devices

1 Information source(s)

- Wikipedia

Ethernet RJ45 connection wiring and cable visual pinout:



click to enlarge

Memory cards

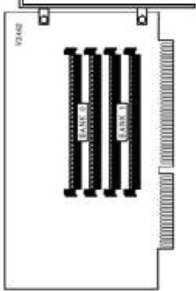
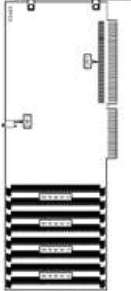
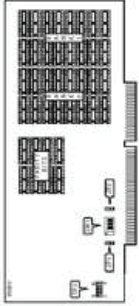
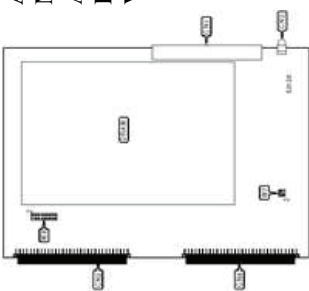
	ACCULOGIC, INC. Memory card RAMPAT!-PLUS 8-bit ISA (8/16-bit ISA on RAMPAT!-Plus)
	ACCULOGIC, INC. Memory card SIMPLY-RAM Serial port, parallel port (both on daughterboard) 8/16-bit ISA
	ACER AMERICA CORPORATION Memory HMB-16/20 None unknown
	ADVANCED LOGIC RESEARCH, INC. Memory card 32-BIT MEMORY EXPANSION (REV. B) 16-bit ISA
	ALPHA MICROSYSTEMS Memory AM-740 Board connector (1) VMEbus
	APPARAT, INC. Memory 256K MEMORY BOARD (REV. A) N/A 8-bit ISA
	APPARAT, INC. Memory 256K MEMORY BOARD (REV. B) N/A 8-bit ISA

Diagram of a memory board with a large array of memory chips and a connector at the bottom.

APPARAT, INC.
Memory
256K MEMORY BOARD (REV. C)
N/A
8-bit ISA

Diagram of a memory board with two distinct sections of memory chips.

APPARAT, INC.
Memory
DUAL ASYNC + 256K RAM BOARD
Serial ports (2)
8-bit ISA

Diagram of a memory expansion board with a central chip and various connectors.

AST RESEARCH, INC.
Memory Expansion
G-11 SIX PAK 286
Feature Connector
16-bit ISA

Diagram of a memory expansion board with a central chip and connectors.

AST RESEARCH, INC.
Memory Expansion
G-13 RAMPAGE PLUS 286 VER. II & III
Feature Connector
16-bit ISA

Diagram of a memory expansion board with multiple memory chips.

AST RESEARCH, INC.
Memory Expansion
G-9 SIX PAK PLUS
(1) Parallel, (2) Serial
16-bit ISA

Diagram of a memory card with a large array of memory chips.

AST RESEARCH, INC.
Memory card
RAMPAGE 286 EXPANDED MEMORY CARD
None
16-bit ISA

Diagram of a memory card with a small chip and connectors.

AST RESEARCH, INC.
Memory card
RAMPAGE AT (202079-001)
None
16-bit ISA

Diagram of a memory card with a large array of memory chips.

AST RESEARCH, INC.
Memory card
RAMPAGE!
Memory

Timeline:
[Hide Images](#)



1970

Datapoint 2200

1971



1972

HP-9830A

1973

1974



MITS Altair 8800

1975



IMSAI 8080



IBM 5100



MOS KIM-1



Sol-20



1976

PolyMorphic Systems

Poly-88

Apple I



Rockwell AIM 65



Monorail model 7245

Released:	November 1996
Price:	US\$999.95
CPU:	AMD K5 @ 75MHz
Memory:	16MB RAM, 80MB max; 512K EDO Video RAM
Display:	10.4-inch dual-scan LCD 256 colors, 640x480 pixels
Storage:	3.5-inch floppy, 1GB hard drive, 4X CD-ROM
Comms:	33.6 Kbps dial-up FAX/modem
Ports:	serial, parallel, game controller, VGA
OS:	Windows 95

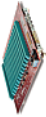
The **Monorail** company was started in 1995 by Douglas "Doug" Johns, along with David Hocker and Nicholas Forlenza, all who came from the **Compaq** computer company.

By the end of 1996, they had designed, manufactured, and sold their first computer - the **Monorail model 7245** - possibly the first desktop with an integrated LCD monitor, known as an all-in-one system.





Computecolor 8001



Wameco QM-1A



Vector Graphic
Vector-1



RCA COSMAC VIP



Apple II



Commodore PET



PolyMorphic Systems
System 8813



Radio Shack TRS-80



Atari VCS (2600)



NorthStar Horizon



Heathkit H8



1977

Monorail all-in-one models released include:

Model	CPU	hard drive	display	RAM	VRAM	CD-ROM	Price
7245	AMD K5 @ 75MHz	1.0GB HD	10.4-inch, 640x480	16MB	512kB	4X	\$799
133	Pentium @ 133MHz	2.1GB HD	10.4-inch, 640x480	16MB	1MB	4X	1,299
166	AMD K5 @ 166MHz	2.1GB HD	10.4-inch, 640x480	16MB	1MB	8X	1,499
7333	AMD K5 @ 133MHz	1.0GB HD	10.4-inch, 640x480	16MB	1MB	4X	899
7350	AMD K5 @ 150MHz	1.0GB HD	10.4-inch, 640x480	16MB	1MB	4X	949
7366	AMD K5 @ 166MHz	2.0GB HD	10.4-inch, 640x480	16MB	1MB	16X	999
7366e	AMD K5 @ 166MHz	2.1GB HD	10.4-inch, 640x480	16MB	1MB	16X	1,199
166LS	AMD K5 @ 166MHz	2.1GB HD	12.1-inch, 800x600	16MB	1MB	16X	1,499
7400	Pentium MMX @ 166MHz	1.6GB HD	10.4-inch, 640x480	16MB	1MB	8X	999
7500	Pentium MMX @ 200MHz	3.0GB HD	10.4-inch, 640x480	16MB	1MB	16X	1,299
200LSe	Pentium MMX @ 200MHz	3.0GB HD	12.1-inch, 800x600	32MB	1MB	16X	1,799

Although initially only sold at CompUSA, and did quite well, **Monorail** was eventually sold at other national retail chains such as Circuit City, Egghead Computer, and mail-order warehouse Micro Warehouse.

By 1998, the **Monorail** all-in-ones were gone, and now with a new logo, **Monorail** started selling standard desk-top and tower systems with separate CRT monitors.



Graphical overview

At this moment there are 366 puzzle pictures below, all of which are featured on this site.

Tetrahedral:
(4 axes)

Cubical:
(6 axes)

Octahedral:
(8 axes)

**Rhombic
Dodecahedral**
(12 axes)

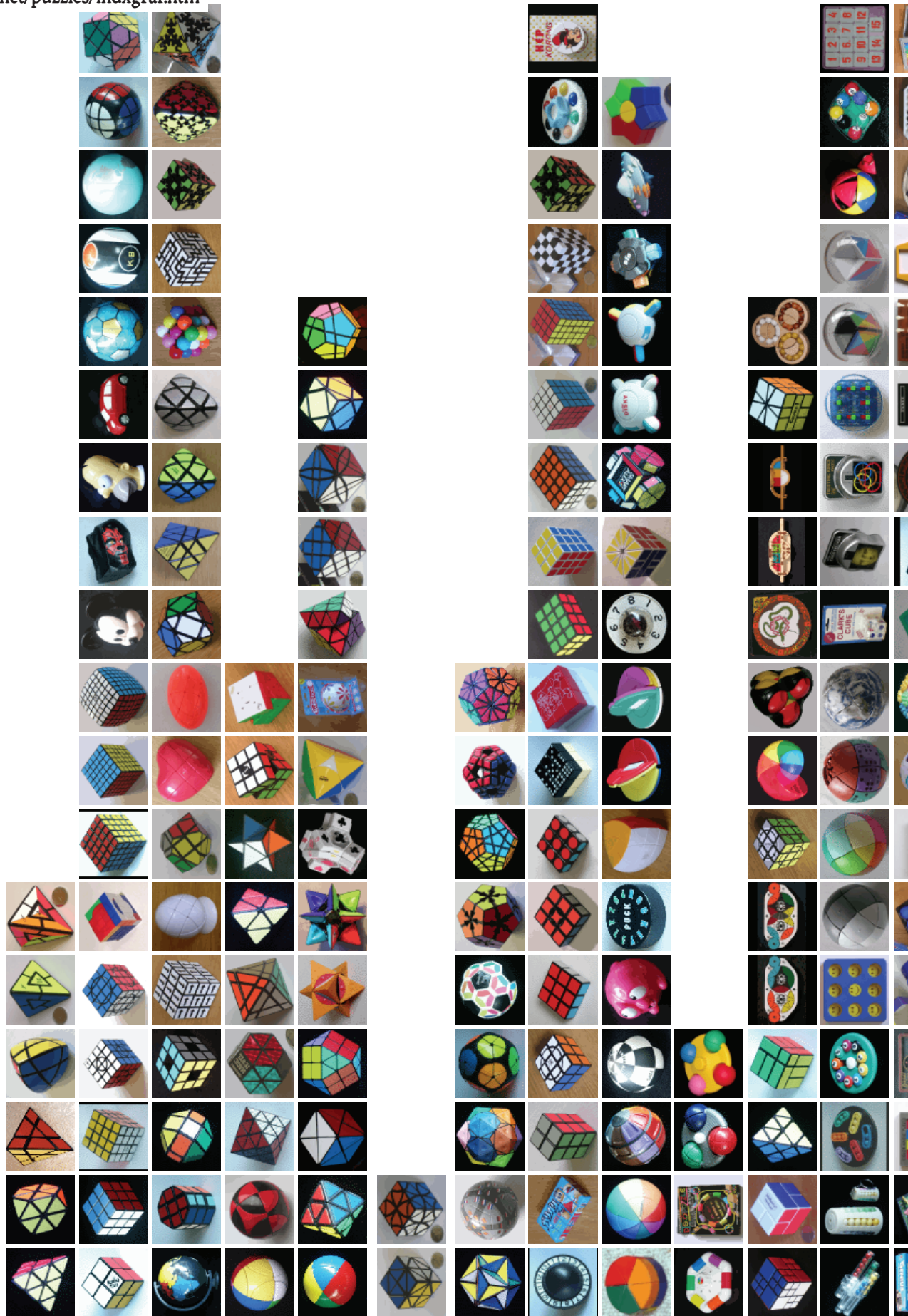
Dodecahedral:
(12 axes)

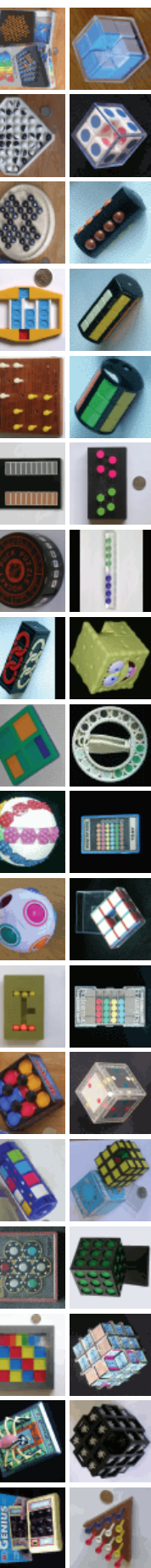
Dihedral:

Toroidal:

**Bandaged /
Blocked:**

With gaps:

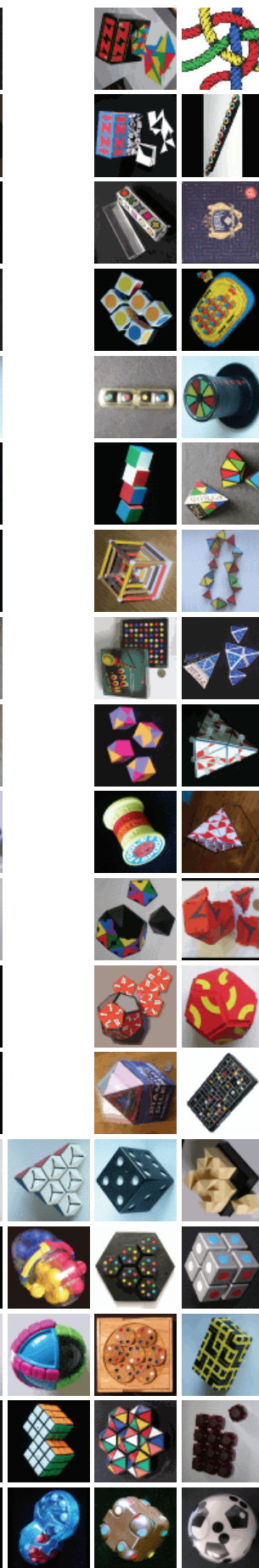




Flat without
gaps:



Non-flat without
gaps:



Pattern
Matching:



Others:

What's New on this site.

The table below lists the additions and significant changes that have been made to the Calculators section of this Web Museum. The date of the most recent update is always shown at the bottom of each page.

Date	Section	Details
2026-04-29	All	Site relocated to www.johnwolff.au due to changes in Australian domain name regulations.
2026-01-13	Comptometer	Revised text, added 10-column Model J , added examples of original colour schemes.
2025-12-10	Technical	Additions to the Australian Calculator agents and prices pages.
2025-11-16	Sanyo	Added ICC-804D portable LED calculator, 1971.
2025-11-10	Electronic-Portable	Revised text, added Rockwell 203 metric conversion calculator, 1974.
2025-11-04	Bell Punch Company	Added Anita 811 LSI pocket calculator, 1972.
2022-09-04	Technical	Revised and expanded the Notes on overhauling a mechanical calculator , especially the Cleaning and Lubrication sections.
2022-06-10	Technical	Major revision of Facit TK/NTK/C1-13 rebuilding procedure . Added Facit TK/NTK/C1-13 mechanical changes page
2022-03-08	Contex	Added two Contex carrying cases.
2022-03-06	Technical	Added new Rebuilding procedure for the Model J Comptometer , revised the 3D11 rebuilding procedure .
2022-03-06	Technical	Revised the Technical Description of the Model J Comptometer , added many new illustrations.
2022-03-06	Bell Punch Company	Major revision. Added new pictures, added more PLUS and Sumlock machines, now includes Sumlock machines with Comptometer nameplates.
2022-03-06	Felt & Tarrant (Comptometer)	Moved Sumlock machines with Comptometer nameplates to Bell Punch Company page; added 8-column Sterling Model J .
2021-12-19	Pinwheel	Added Thales Model B, c.1920 .
2021-12-19	Addo and Multo	Added late-model Multo 3 .

2021-12-01	Marchant	Revised text, added Dactyle, Standard, XL (two versions), and XLA.
2021-07-06	Printing calculators	Added two S.A.B.A. AddMaster machines.
2021-06-19	Slide Adders ("Addiators")	Major revision, added many more machines.
2021-05-30	Burroughs	Revised text, added 10-column Class 3 bookkeeping machine , 1919.
2021-05-26	Sanyo	Revised text, added CY-8150 , CY-2131 , CY-2132 , CY-5012 , CZ-8100 .
2020-11-10	Addo and Multo	Added new page with ten Addo and Multo calculators, revised entries on Printing and Pinwheel pages.
2020-09-15	Technical	Updated the Odhner 239 rebuilding procedure with many small improvements and clarifications.
2020-05-07	Friden	Added Singer/Friden/Hitachi 1115 electronic calculator, 1970.
2019-12-01	Friden	Added US Army hand-crankable STW .
2019-09-10	Casio	Added Casio Memory A-1 , 1976.
2019-09-08	Sharp	Added Sharp EL-8118 , 1976.
2019-01-24	Technical	Added reproduction Instruction Manual for the Fuller Calculator (cylindrical slide rule). Added reproduction Friden Effort Savers promotional booklet.
2018-12-18	Casio	Added Casio "Mini" CM-604 , 1974.
2018-11-19	Sharp	Added Sharp PC-1802 "Digital Rule" (portable scientific calculator), 1974.
2018-10-09	Pinwheel	Revised text, added Tiger H68-21 pinwheel, 1968.
2018-07-31	Technical	Added reproduction Instruction Manual for Friden "Super-Matic Tabulator" Model ST.
2018-07-26	Small adding machines	Added SOLO Handy Adder in red.
2018-05-10	Technical	Revised the Technical description of the Adwel W504 printing calculator .
2017-09-19	Technical	Revised the Technical description of the Odhner pinwheel mechanism and the Rebuilding procedure for the Odhner 239; added a new Rebuilding procedure for the Odhner 127.
2017-07-17	Brunsviga	Various minor revisions, added 94T carry bag .
2017-07-07	Olivetti	Added Underwood Model 400 (re-styled Elettrosomma 22).

BUGS, BUGS, and more BUG Keys.



082.....Australian Bug THE BUZZA Type 100 circa 1940s. Used at Sydney Maritime Coast Station "VIS".

[Australian Coastal Radio History.](#)
[Old Mogo. Town. NSW Australia.](#)

Here is info on the man and company called BUZZA; During its existence, "Buzza Products Sydney" made a variety of keys from simple learners set to a very good straight key (Triumph or J-38 style), a not so very good straight brass key (an inferior copy of the PMG brass key) and a good bug key, the Buzza 100. The company also made buzzers, oscillators, etc. The word BUZZA is derived from the word buzzer. It all started when German Engineer AUGUST A. KRAUS migrated to Sydney in the 1930s. After working for someone else, he started his own business, making Morse sets at a location near Clarence Street Sydney. When war was declared on Germany, Kraus was interned at Sydney's Long Bay Gaol, but was released to design and oversee the manufacture of Morse keys for the Australian Army and Navy. After the war he kept on making keys, but at a reduced capacity. In 1955 Buzza Products moved into new premises at 80 Holham Parade Artarmon NSW. Here the production were mainly the now popular and relatively cheap toy Morse trainers. But here Buzza Products also made toy xylophones, toy Meccano sets, pipe cleaners and spinning wheels for potters. The company ceased to exist in 1977, two years after the death of Mr Kraus.



Simplex Auto Info

084..... Australian Jigger Bug. Here is another great Australian Simplex Auto Standard Model semi automatic key with a black base. The brass label reads "THE SIMPLEX AUTO (REGD) MANUFACTURED BY LEO G. COHEN MELBOURNE VIC". Melbourne telegraphist Leo Cohen stopped making Simplex Auto jiggers after he went into the Army on 13th Nov. 1939, but his name appears on the Simplex Auto labels up to about S/No 5xxx.



Here is some information courtesy of Maurice / F5NQL :

• "The story of the Vibro Mors was short. When the US signal Corps came to Normandy after the June 6th 1944 landings, they brought some bugs made by Lionel and Martin's Vibroplex, some were sold on the black market to European op's. In Paris there was the French School of Radio in the rue de la Lune. A lot a of CW operators issued from this school had heard about the bugs but it was quite impossible to find one, and buying them from the States plus customs fees was costly, even when purchased through the free zones French Overseas Territories". "So some operators and amateurs got in touch with "Radio Lune", a Radio Store, in the same rue de la Lune and around the 50's appeared the Vibro-mors. It seems that only one model exists, the Type A. No information were given about the constructor, even to day we know the seller not the fabricant", Maurice / F5NQL.



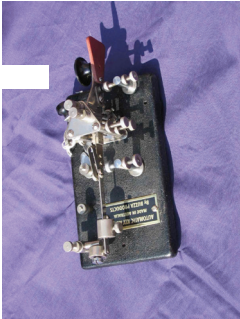
087..... Canadian Bug made for the Royal Canadian Air Force by Wilson, Toronto. Circa 1940.

524..... Australian Simplex Auto Key with great history! This key S/No 41 35 circa 1940/41 was used from 1900 - 2006 in the radio shack of HMAS Vampire / VK2CCV by Wireless Operators of the NSW branch of the Royal Naval Amateur Radio Society (RNARS NSW). The Vampire is permanently alongside the wharf at Darling Harbour, Sydney, Australia and is one of the many attractions of the Australian National Maritime Museum. Just think of the QSO's made on this little beauty!

- Vampire is a Daring class destroyer built in 1956 at Cockatoo Island Dockyard, Sydney. 3,950 tonnes.

[HMAS Vampire](#)

085..... French Bug Key, Vibro Mors Type A circa 1950s.





088&089 A Canadian Vertical Bug and a MINI Bug, both made by Merric of Ontario. The vertical bug known as the "MERRICK VERTICAL BUG KEY" can be seen on the front cover of Morsum Magnificent N777, Sept/Oct 2001. The photo shows the vertical without it's paddles fitted.

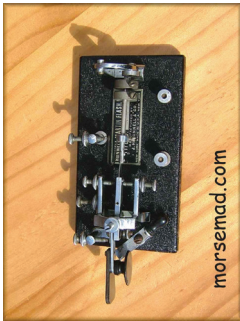


090

090.....American McElroy bug, "Hole In The Wall" Made by Telegraph Apparatus Co. Circa 1936/1938. TAC - a company involving T.R. McElroy, this key features a square main frame with a large circular hole through the centre, thus acquiring the name the Hole In The Wall.

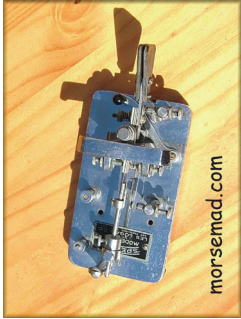
091.... American Bunnell Martin Flash Bug Type 5-48. Circa 1930s.

092



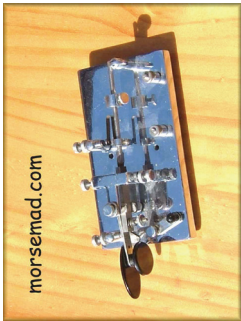
092

092..... American Logan Speed X Bug, T-Bar Model 501. Circa 1930s, The label reads "SPEED X, MODEL 501, MFD BY LES LOGAN CO, SAN FRANCISCO, CALIF. U.S.A." An all chrome finish to this key with rounded comers to the base and 1/4" dot and dash contacts.



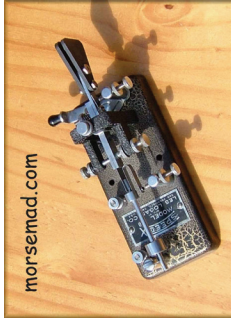
093

093..... American Logan Reverse Frame Bug. Circa late 1930s. A Logan Speed X Model 501 Professional. Has similar looks to the early Speed X of Les Logan, with a 6 1/4" by 3 1/2" nickel plated base and a reverse frame where the arms extend to the rear to carry the pivots. Three feet held on with pins and not screws. Also has the 1/4" contacts. Supplied without a label to various retail outlets in America.



094

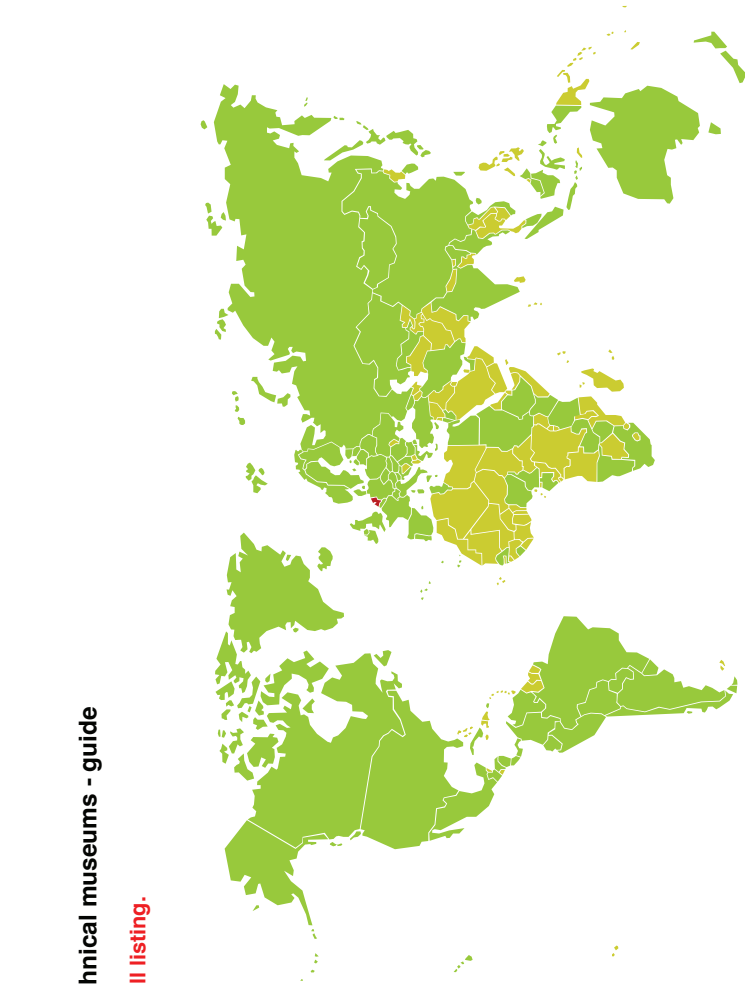
094..... American Logan Speed X Model 510. Circa 1930/40s. This is a smart little bug with a nice black and gold finish. The base is hollowed out cast metal with the three feet on pins, the base measures 5 3/4" by 2 1/2". The label reads "SPEED X, MODEL 510, MFD BY LES LOGAN CO, SAN FRANCISCO, CALIF. U.S.A."



095

095..... A British bug key (Or is it?) believed made by the Northampton Plating Company, Nottingham, England, c1946. Some labelled "Radio-Aid". This one pictured has a square shaped pendulum. A few known with a blue/grey finished base, and a round pendulum





Scroll up for the map.

Museum Name

City

☐ Only with radios
☐ Without closed museums

Country

State

Museum type

Netherlands

-- All states

Not Specified

☐ Selected museum type only

Search

Reset search

Here you select a type for interesting pictures only:

Not Specified

Result: 1 to 90 from 90

No.	Rating	Ctry	Zip	Town	Museum name	Pic	Text
1		NL	1011 VX Amsterdam	Science Center NEMO	Science Center NEMO		
2		NL	1015 MN Amsterdam	Pianola Museum	Pianola Museum		+
3		NL	1018 BJ Amsterdam	Museum 't Kromhout	Museum 't Kromhout		
4		NL	1018 KK Amsterdam	Het Scheepvaartmuseum	Het Scheepvaartmuseum		
5		NL	1098 XG Amsterdam	Uva Computer Museum	Uva Computer Museum		
6		NL	1115 BJ Duivendrecht	Centre for German Communication and related Technology	Centre for German Communication and related Technology		& +
7	★★★★★	NL	1217 WE Hilversum	Nederlands Instituut voor Beeld en Geluid	Nederlands Instituut voor Beeld en Geluid		+
8		NL	1399 PK Muiderberg	Molen De Onrust	Molen De Onrust		
9		NL	1436 BM Aalsmeerderbrug (Rijnsenhout)	CRASH Luchtoorlog & Verzetsmuseum '40-'45	CRASH Luchtoorlog & Verzetsmuseum '40-'45		+
10		NL	1509 AW Zaandam	Zaanse Schans	Zaanse Schans		
11		NL	1509 BT Zaandam	Museum van het Nederlandse Uurwerk	Museum van het Nederlandse Uurwerk		
12		NL	1624 NN Hoorn	Museumstoomtram Hoorn-Medemblik - SMH	Museumstoomtram Hoorn-Medemblik - SMH		
13		NL	1671 HJ Medemblik	Nederlands Stoommachine Museum	Nederlands Stoommachine Museum		
14		NL	1742 NB Schagen	Automuseum Schagen	Automuseum Schagen		

15	NL	1781 AA Den Helder		Marinemuseum Den Helder
16	NL	1781 AS Den Helder		Nationaal Reddingmuseum Dorus Rijkers - Rettungsbootmuseum
17	NL	1781 BW Den Helder		Museum Lichtschip nr. 10 Texel
18	NL	1795 JS De Cocksdorp		Luchtvaart- & Oorlogsmuseum Texel (LOMT)
19	NL	1796 MA De Koog TEXEL		Maritiem- en Juttersmuseum Flora
20	NL	1861 LK Bergen NH		Auto Union Museum Bergen
21	NL	2011 CH Haarlem		Teylers Museum
22	NL	2011AA Haarlem	Closed	Radio-Televisie-Design Museum
23	NL	2031 EA Haarlem		Draaioorgelmuseum Haarlem
24	NL	2142 ER Cruquius		Gemaal De Cruquius
25	NL	2152 CZ Nieuw-Vennep		Nederlands Transport Museum
26	NL	2181 HC Hillegom	Closed	Den Hartogh Ford Museum
27	NL	2312 WC Leiden		Museum Boerhaave
28	NL	2518 AD Den Haag	Closed	Museum voor Communicatie - Beeld & Geluid
29	NL	2584 RZ Den Haag	★★★★★	Miniatuurpark Madurodam
30	NL	2594 BB Den Haag	★★★★★	Louwman Museum - Nationaal Automobiël Museum
31	NL	2961 AS Kinderdijk		De molens van Kinderdijk
32	NL	3011 EA Rotterdam		Maritime Museum Rotterdam
33	NL	3011 WH Rotterdam		Mariniersmuseum Rotterdam
34	NL	3051 KA Rotterdam	★★★	Rotterdams Radio Museum
35	NL	3151 XP Hoek van Holland	★★★	Museum RockArt
36	NL	3221 CC Hellevoetsluis		Lichtschip 12 NOORD HINDER
37	NL	3233 LP Oostvoorne	Closed	Oldtimermuseum De Rijke te Oostvoorne
38	NL	3253 MD Ouddorp		Museum R.T.M. Ouddorp
39	NL	3412 KB Lopikerkapel		Omroep Zender Museum
40	NL	3441 AE Woerden		Saabmuseum d'Oude Bolneus
41	NL	3511 JP Utrecht		Museum Speelklok
42	NL	3581 XW Utrecht		Nederlands Spoorwegmuseum - NSM
43	NL	3611 AE Oud Zuilen		Planetarium Zuylenburgh - Zuylenburgh Collection
44	NL	3768 MX Soest	★★★★★	Nationaal Militair Museum
45	NL	3818 LN Amersfoort		Historische Collectie Verbindingsdienst (HCV)
46	NL	4116 BR Buren		Marechausseemuseum - Polizeimuseum
47	NL	4305 RJ Ouwerkerk		Watersnoodmuseum
48	NL	4511 RC Breskens		Visserijmuseum Breskens
49	NL	4543 CD Zaamslag, Zeeuws Vlaanderen		Minox museum Nederland
50	NL	4571 ES Axel		Witte's Museum voor Fotografie en Radio
51	NL	5248 NL Rosmalen	Closed	Autotron Rosmalen
52	NL	5283 VK Boxtel	★★★	Classic park
53	NL	5465 RC Zijtaart		Autosalon Doornhoek
54	NL	5492 SB St Oedenrode (Bij Eindhoven)		Christ Boelens Juke boxen
55	NL	5541 CH Reusel	Closed	Radio Amateur Museum
56	NL	5611 AZ Eindhoven		Philips museum
57	NL	5611 LH Eindhoven		Crypto Museum
58	NL	5613 DA Eindhoven		DAF Museum
59	NL	5652 BH Eindhoven		Philips Historische Producten
60	NL	5721 WC Asten		Nationaal Klok & Peel Museum Asten
61	NL	5758 AM Neerkant	★★★	Techniek met 'n Ziel
62	NL	5825 AM Overloon	★★★★★	Liberty Park - Nationaal Oorlogsmuseum en Verzetmuseum & Marshall Museum
63	NL	6021 CR Budel	Closed	Jan Corver - Museum voor Radiozendamateurisme
64	NL	6461 MA Kerkrade		Discovery Center Continium (ex. Industrien)
65	NL	6511 XR Nijmegen		Nationaal Fietsmuseum VELORAMA



RICHARDS RADIOS

Click on the pictures for more information.



Barclay 5189
1966



Beltona
1926



Burndepth 252
1935



Burndepth 290
1938



Bush DAC90A
1953?



Bush DAC90A
1950?



Bush VHF81
1964



Cosmor
1953



Cosmor 463AC
1947



Ekco A23
1945



Sobell 439
1949



Bush VHF80
1961



LMT 214
1951



Pye L75B
1946



Ekco MBP99
1949



Ekco A277
1956



Bush DAC11
1949



WWII R1155B
1940's



WWII Civilian Radio
Invicta
1944



WER Mighty Midget
[two]
1949



Pye P118U/C
1958



Pye T15
1945



Murphy A38C
1937



Bush DAC90A
1953?



Pye Fenman
1956/7



Philips 341A
1956/7



Pye P75
1953

Ultra 25
1935



Cosmor 365
1935



GEC BC647
1958



McMichael 471U
1947



Pye P25UBQ
1951



Pye P35
1954



Europhon
1956



Ekco U243
1955

Ultra FM950
1957/8

National Baby
1938?



Kolster Brandes GR40T
1953



Westminster ST655
1954



Philips B3G25U
1964



GEC BC402
1959



Marconiphone 283
1933



Double Decca 46
1946



McMichael 471U
1947



Ferguson
1953



German Army 'Kohn' ES2b-1
1942



Unknown French radio
1954?



Gordon Elf Cameo
1939



Hollybush
1949



Philco 56
1933



Philco 444
1937



Philips B3GG3A
1956



Pye T19D
[two]
1950



Radiola 942A
1953



Cosmor kit radio
1935



Decca Double Decca
1946



Philips Merrion
1960



Philips
1950



General Electric portable
1940's



Defiant MSH934AC
1938



Murphy U144
1951



Blaupunkt Nizza
1961



Ekco A21
1945



HMV 1127
1955



Murphy a122
1947



Bush DAC10
1950



Pilot Jack
1949



Marconiphone model 882
1939



Ferranti model 525
1952/3



Ekco model AC76
1935



WW2 civilian radio
Murphy
1944

U122

Ekco

U1

Ekco model U29
1946



Ferranti model 255
1956

U2

Radio Rentals model 66
1956?



Murphy model U128
1948

U3

GEC model BC9490
1948

U4

Hacker Mayflower2
1963



Home made
3valve radio
1930



Bush VHF80
1960



Etronic RA 640
1947



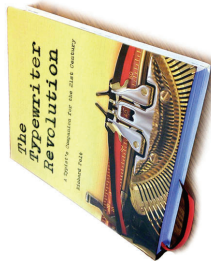
Bush DAC 70
1958

Ever Ready
Sky Queen
1953/6

The Classic Typewriter Page

Writers and their Typewriters

presents



Richard Wright and his Royal Arrow

The link between writer and typewriter is often an intimate one that lasts for decades. Here are some favorite brands of typewriter used by authors, past and present. This information comes from some of my own research, but especially from correspondents who have investigated their favorite writers. If you have more information, [please send it to me](#). [Richard Polt](#) (preferably with a photo that documents the connection between writer and typewriter). Particular thanks to [Steve Hahn](#), [Karen Kukil](#), [Robert Neuwirth](#), [David Tucker](#), [Robert Godlieb](#), [Brad Coulter](#), [Jean-Philippe Daignan](#), and [Robert Messenger](#), whose [article on typewriter-loving writers](#) you can read [here \(PDE\)](#). Thanks to [Matthew Solan](#) for providing us with his own [article on writers and their typewriters](#) (PDF). For more on this topic, see [Georg Summegegger's site](#) (in German).

- Edward Abbey: Royal KMG ([photo 1](#), [photo 2](#))
- Ansel Adams: Olivetti i Lettera 22
- Douglas Adams: Hermes 8 ([photo 1](#), [photo 2](#))
- Ryan Adams (musician): Olympia SM3 ([photo 1](#), [photo 2](#))
- Joy Adamson: Remington portable no. 1
- Renata Adler: IBM A or B
- Edward Albee: Remington 17 or KMC
- Lloyd Alexander: Underwood Five
- Nelson Algren: Underwood, Remington 17 or KMC ([photo 1](#), [photo 2](#))
- Muhammad Ali: Olympia SM3 (story)
- Woody Allen: Olympia SM3
- Isabel Allende: Olivetti Linea 88? Olympia electric
- Joseph Alsop (columnist): Royal 10 (1939 photo); Underwood Standard SX-100, ca. 1950-52 (Jan. 1968 photo)
- Jorge Amado: 1950s Royal portable ([photo 1](#), [photo 2](#)), ca. 1980 Erika
- Kingsley Amis: Adler standard, [photo 1](#), [photo 2](#) (typewriter mentioned in *Paris Review*, Art of Fiction No. 59 and Amis' *The King's English*)
- Martin Amis: Olivetti Lettera 32 (1981 photo), Triumph/Adler electronic (possibly SE 1010/1030)
- A. R. Ammons: Underwood SS (ca. 1946-47)
- Roald Amundsen: folding Erika (in Polar Museum, Tromsø, Norway)

- Julie Andrews: [IBM Selectric I #4085682](#) (formerly in Steve Soboroff's collection)
- Maya Angelou: [Adler Meteor 12](#) (formerly in Steve Soboroff's collection)
- Benigno Aquino: [Smith-Corona Skyriter](#) (pictured on [Filipino banknote](#))
- Louis Armstrong: [Remington no. 5 portable](#), [1950s Smith-Corona portable](#)
- John Ashberry: [Royal Aristocrat](#); [Royal KMM](#) (now at Harvard's Woodberry Poetry Room); [Royal KMG](#)
- Harry Ashmore: [Royal KMM](#); [Underwood](#) (SS?)
- Isaac Asimov: [IBM Selectric I](#) (photo; painting on cover of his [Opus 200](#); [IBM Selectric II](#) (in use))
- Miguel Ángel Asturias: [Hermes Baby](#) or [Rocket](#)
- Margaret Atwood: [IBM Selectric I](#)
- Paul Auster: [Olympia SM9](#) (here's a book about his Olympia), [Olivetti Lettera 22](#) (shown in 2013 interview)
- Michael Avallone: [Remington KMC](#) (?)
- Rev. W. V. Awdry: [Imperial 66](#)
- Ruby M. Ayres: [L.C. Smith](#)
- Ingeborg Bachmann: [Erika M](#), [Exci TP1](#), [Olivetti Studio 44](#) (1964), [Olympia SG13](#)
- Beryl Bainbridge: [Imperial Good Companion no. 1](#)
- Russell Baker: [Royal KMM](#)
- Letitia Baldrige: [IBM Model C](#) (photo ca. 1961)
- James Baldwin: [Adler standard](#), [Adler Gabriele 35](#) (another photo), [Olympia SM7](#), [Smith-Corona Coronamatic 2200](#) (story)
- J.G. Ballard: [Olympia Monica](#) (same machine [here?](#) or [Olympia SM9](#))
- Donald Barthelme: early [L.C. Smith?](#) (1964 photo)
- L. Frank Baum: [Smith Premier](#)
- Vicki Baum: [Mignon](#) (photo 1, photo 2)
- Betsy Beaton (author Nov 1948): [Underwood standard No. 6](#)
- Charles Beaumont: [Torpedo Solitaire](#) (photo 1, photo 2, photo 3)
- Brendan Behan: [Remington portable no. 2](#) (in use; in museum); [Olivier Courier \(?\)](#)
- Saul Bellow: [Royal KMG](#); [Smith-Corona electric](#)
- Stephen Vincent Benét: [Remington portable no. 3](#)
- Mildred Benson (author of most of the Nancy Drew mysteries): 1972 [Olivetti Linea 88B #B285379](#) (formerly in Steve Soboroff's collection)
- Ingrid Bergman: [Smith-Corona Skyriter](#)
- Wendell and Tanya Berry: 1956 [Royal standard](#) (presumably an HH)
- William Peter Blatty: [Royal standard](#) (KHM?)
- Robert Bloch: [Woodstock](#)
- Enid Blyton: [Imperial Good Companion](#) (see her typing in this film)
- Andrea Bocelli: [Perkins Brailier #B-1834](#) (formerly in Steve Soboroff's collection)
- Dirk Bogarde: [Adler Primus](#), [Smith-Corona Coronet Super 12 Coronamatic](#)
- Heinrich Böll: [Remington Travel-Riter Deluxe](#)
- Roberto Bolaño: [Olivetti M40](#); [Remington](#), probably no. 12 or no. 16 (ca. 1970 photo)
- Erna Bonbeck: [IBM Selectric I](#)
- Ruskim Bond: [Olympia SM3](#)
- Bill Bui (WWII correspondent): [Remington noiseless portable](#)
- William Borz: [Hermes Baby](#)
- Elizabeth Bowen (Anglo-Irish writer): [Olympia Splendid 33](#)
- Roger Bowen (actor and author): [Smith-Corona Citation electric](#)
- Karin Boye: [Corona 3, Patria](#)
- Malcolm Bradbury: [Smith Corona Automatic Electric](#), [Olivetti Editor 5](#), and 1970s [Olympia portable](#)
- Ray Bradbury: [Underwood](#) (no. 5?), 1947 [Royal KMM #3756210](#) (formerly in Steve Soboroff's collection), [IBM Selectric](#), [IBM Wheelwriter](#), [Silver-Seiko ultraportable](#) (likely branded as [Royal](#))
- Barbara Taylor Bradford: [IBM Wheelwriter](#) (story)
- Ben Bradlee: [Remington 17](#)
- Marlon Brando: [Royal Arrow](#) or [Aristocrat](#)
- Richard Brautigan: [Royal KMM](#), [Olivetti Praxis 48](#)
- Kate Braverman: [IBM Model C](#)
- Bertolt Brecht: [Erika](#)
- Gerald Brennan: [The Society Facile](#)
- Jimmy Breslin: [Hermes Ambassador](#), [Olympia SG3](#)
- Poppy Z. Brite: [Smith-Corona Sterling Electric 12](#) (used to write *Lost Souls*; photo from eBay auction by Brite himself in 2013)
- Joseph Brodsky: [Hermes Baby](#) or [Rocket](#), [Grona Kolibri](#)
- Gwendolyn Brooks: [Underwood no. 5](#), 1964 [Hermes Rocket](#) (more info at [American Writers Museum](#))
- Richard Brooks (director): [Royal KMM](#); [Royal portable](#) (30s-40s)
- Joyce Brothers: [IBM Selectric II](#)
- Alton Brown: [Hermes 3000](#) (he has a typewriter collection)
- Helen Gurley Brown: [Remington Rand](#); [L.C. Smith 1930s/40s](#), [Royal Empress](#), [silver-plated Royal Empress](#)
- Spencer K. M. Brown: [Hermes Featherweight](#)
- Malcolm W. Browne: [Hermes Baby](#)
- John Brunner: [Smith-Corona electric](#)s (marked "NEVER UNDERESTIMATE THE STUPIDITY OF EDITORS")
- Pearl S. Buck: [Royal P](#); [Royal KMM](#) (1967 photo)
- William F. Buckley, Jr.: [Royal HH](#), [Olivetti Lettera 32](#)
- Charles Bukowski: [Royal HH](#), [Underwood Standard](#), [Underwood portable](#) (ca. 1940s), [Olympia SG1](#), [IBM Personal Selectric](#) (see also Bukowski's poem "IBM Selectric")
- Mikhail Bulgakov: [Olympia 8](#) (photo from [Bulgakov museum](#))
- Ivan Bunin: [Remington portable no. 2](#)

My Electronics Workbenches

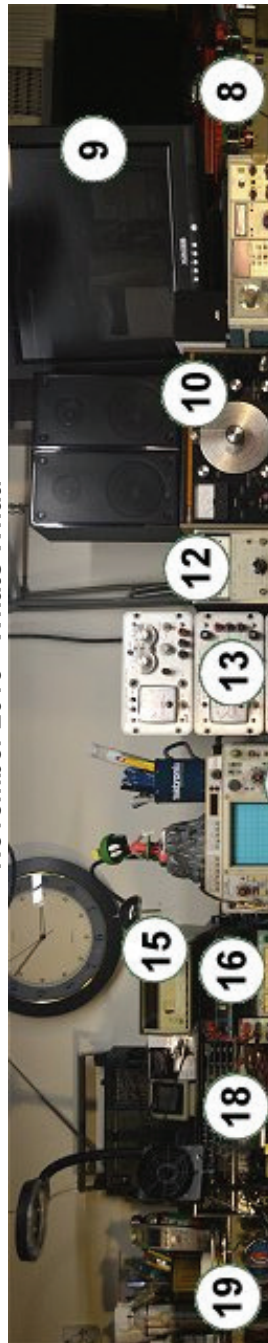
Several people have asked me what test equipment and tools I use on my bench to work on antique radios, vintage test equipment, and electronics. Although the configuration and equipment I use has changed over time, here are photos and descriptions of some of the equipment and tools I currently use on my electronics workbenches to restore antique radios and vintage test equipment for my collection.

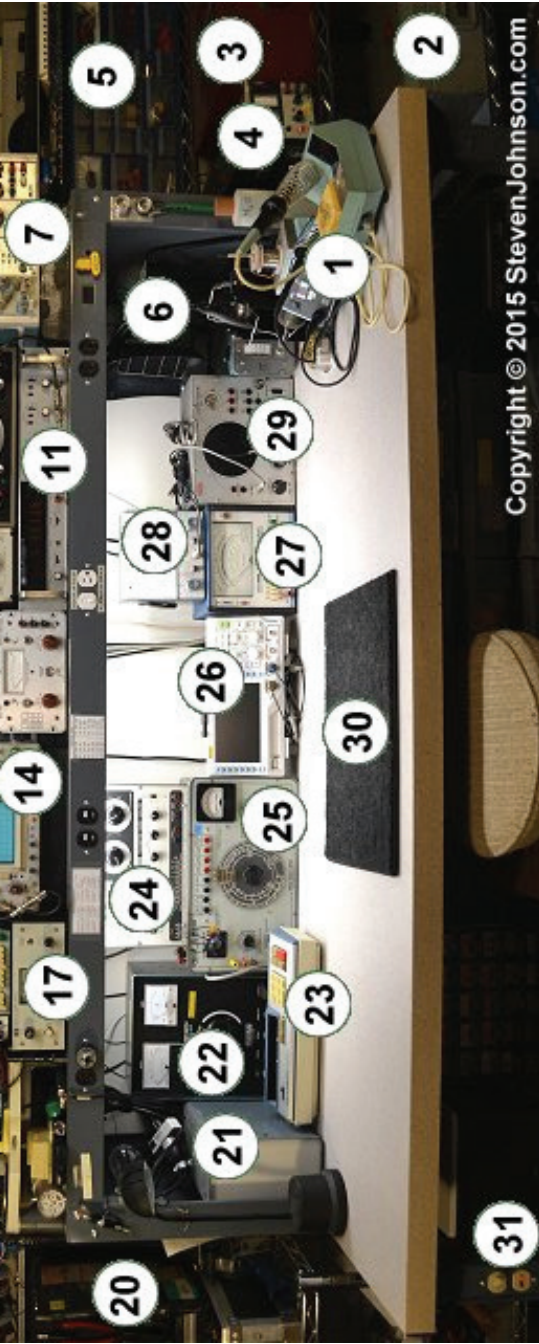
Main Workbench



[Larger Photo](#) Latest Photo: November 2015

November 2015 - Whats What:





1. Weller WTCPN and WESD51 Soldering Stations
2. Supreme I177 B Military Tube Tester
3. Hickok 6000B Mutual Conductance Tube Tester
4. Kerco High Current DC Power Supply
5. Adapter Storage
6. Weller Soldering Fume Extractor
7. Tektronix 504 Rack with:
 - Tek FG503 Function Generator
 - Tek DM501A DMM
 - Tek DC504 Counter/Timer
 - Tek PS503A Dual DC Power Supply
8. Tube Socket Adapters
9. Networked Computer
10. B&K E200D Signal Generator
11. HP Nixie Tube Frequency Counter/Timer/DVM
12. HP 400EL AC RMS Voltmeter
13. Power Designs DC Power Supplies (3)
14. Tektronix 465DM Analog Oscilloscope
15. Hewlett Packard 5381A Frequency Counter
16. Fluke 8000A & 8800A DVMs
17. HP 6289A DC Power Supply
18. Hallicrafters S-12 Receiver
19. Wire and supplies
20. Xcelite Tool Kit
21. Isolation Transformer
22. Staco Variac AC Power Supply
23. Remington Nixie Tube Calculator
24. B&K 960 Transistor Radio Tester
25. Sprague TO-5 Capacitor Tester
26. Rigol DS1074Z Digital Oscilloscope
27. Hickok 5720 FET Multi-Meter
28. RCA WV-98C Vacuum Tube Voltmeter
29. Eico 147A Signal Tracer
30. Carpet Square for chassis rotating
31. Bench Master On/Off Switch

Micro Soldering Work Station

As my eyes have gotten older, electronics has gotten smaller. Also, when working on the newer sensitive components and circuit boards, static can be a problem. Not only are the new surface mount devices smaller and harder to work with but many can be ruined by just a small static discharge. This ESD (ElectroStatic Discharge) safe soldering station I put together includes an inspection microscope for working on tiny surface mount components and ESD safe soldering and desoldering tools. This equipment would have taken up too much room on the main bench so I decided to make it a separate workstation.

Timeline: Hide Images	
1970	 Datapoint 2200
1971	
1972	 HP-9830A
1973	
1974	
1975	 MITS Altair 8800
	 IMSAI 8080
	 IBM 5100
	 MOS KIM-1
	 Sol-20
1976	 PolyMorphic Systems Poly-88
	 Apple I
	 Rockwell AIM 65
	 CompuColor 8001
	 Wameco QM-1A

1977		Vector Graphic Vector-1
		RCA COSMAC VIP
		Apple II
		Commodore PET
		PolyMorphic Systems System 8813
		Radio Shack TRS-80
		Atari VCS (2600)
		NorthStar Horizon
		Heathkit H8
		Intel MCS-85
		Bally Home Library Computer
		IBM 5110



[Periodicals](#)

[Games](#)

[3Com](#)

[ABB](#)

[Actebis](#)

[Actis](#)

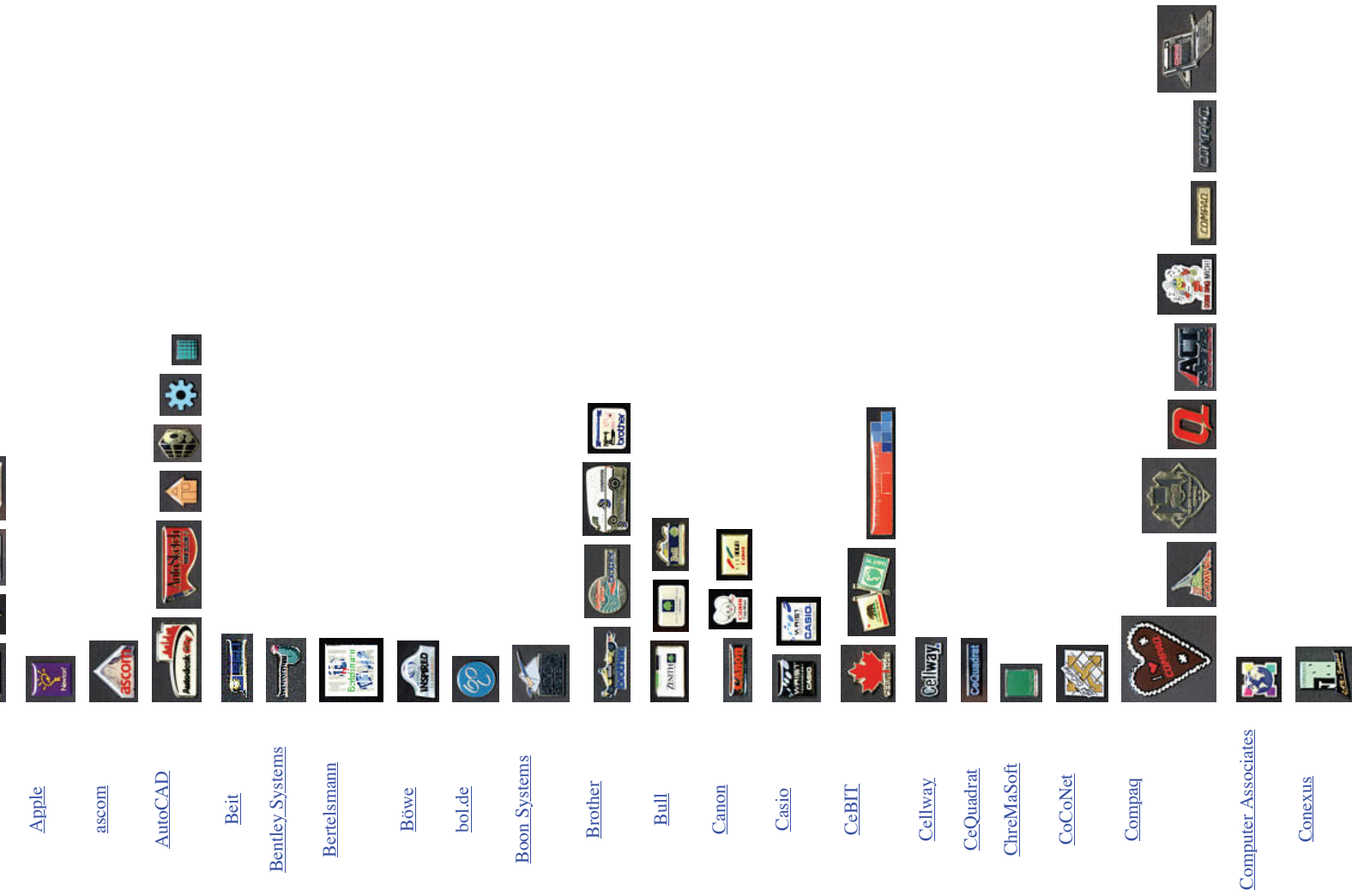
[Adobe](#)

[AEG](#)

[Agfa](#)

[Alarmcom](#)

[Alcate!](#)



RADIO WAVES below 22 KHZ

Nature Radio Signals and strange emissions at very low frequency



WEB SITE SERVICES

[COLLABORATORS LIST](#)

[OPEN LAB RULE](#)

[WHY THIS WEB SITE?](#)

[RADIO NATURE,](#)

[Reception and study of natural origin radio signals.](#)

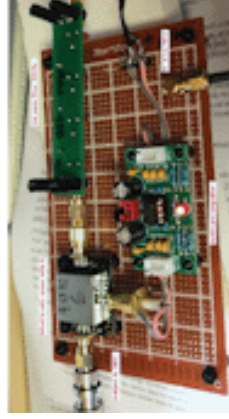


By Renato Romero

English version is available
by **RSGB** www.rsgbshop.org

MOST RECENTLY PUBLISHED

NEW [Downconversion of VLF Signals to the Audio Band for Practical Measurement](#) By J-M Polard & P. Newton (posted May.26)



NEW [MiniVin ACQBoard](#) By A. Vinassa (posted Apr.26)

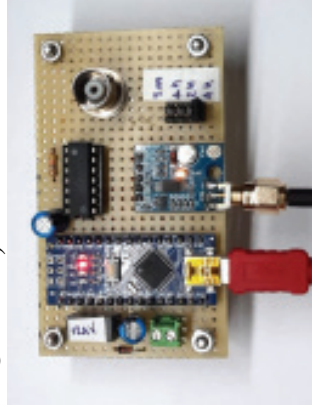


[An Optical Active Isolator for VLF receiver](#) By A. Vinassa (posted Jan.2025)



RECEPTION TECHNIQUES

[A simple and accurate audio marker generator](#) By A. Vinassa and R. Romero (posted Oct.2023)



[Recycling an old Smartphone...](#) by M. Recchia (posted Jun.2019)



[DCF77 or MSF time delay](#) J-M Polard & P. Newton (posted Feb.2019)

[Creative Sound Blaster X-Fi modification](#) By M. Pernter (posted Apr.2018)

VLF Openlab Observatories

LIVE DATA VLF MONITORING STATION



[CMN - CUMIANA-IT](#) (Electric), by R. Romero



[ERO- ETNA Volcano-IT](#), by E.R.O. Team



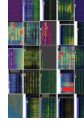
[VIRGO-IT](#), by E. G. O. Team



[SOS-ENATTOS mine-IT](#), by E. G. O. Team



[LANDES-F](#), by J. M. Briessel & M. Brunel



[Monitoring Network OVERVIEW](#)

NO LONGER ACTIVE OR ON STANDBY



[RMG - ROMAGNA-IT](#), by F. Scremin



[IRA - NORTHERN CROSS RADIO Telescope-IT](#), by CIPH/ICPH, IRA-INAF



[LRN-Laurentian Univ.-CA](#), by K. Saroka

Visitors:

Access since 01/09/1999.
Click on the counter to view
visitors data . Provided by
<http://www.bravenet.com>

PROMOTED SITES and
ACTIVITIES

VLF projects,
aligned to OPEN-LAB rule



LW RDF PROJECT
By Manfred Kerckhoff
(They are constantly updated)

Definitions of ELF, VLF...

Recommendation
ITU-R V.431-9 (10/2025)
Nomenclature of the frequency and
wavelength bands used in
telecommunications
(PDF 335 kB)

contact@vlf.it



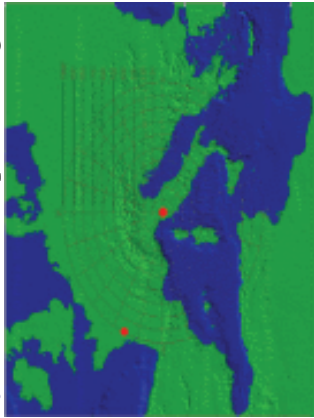
**DIY Ground Loop Breaker for clear VLF
Reception** By A. Vinassa (posted
Sep.2024)



A simple PPS pulse shortener By J-M
Polard & M.Vallejo (posted Jan.2024)



**Azimuth localization of
sferics/tweeks and visualization on polar
map**, by V. Cammelli. (posted Aug.2021)



From coaxial to optical fiber by
P.Poggi (posted Dec.2014)

The stealth antenna by P.Poggi (posted
Oct.2014)

**Dual polarization, balanced, VLF
antenna** by P.Poggi (posted May.2014)

**A High Bandwidth, Low Noise Optical
VLF Link** by Mike Smith (posted
Feb.2014)

IDEALLOOP H301 - VLF loop receiver
by L. Feletti and R. Romero (posted
Jan.2014)



Audio Antenna by Pierluigi Poggi
(posted Jul.2013)

**New theory about the ELF- Ground
Signals** by Kurt Diedrich (posted
Jun.2013)

INSTALLATION OF TNU VLF



CMN-CUMIANA-IT
(Magnetic), by R.Romero
PNT - PONTESE Dew-IT,
by CSP

How to start up a VLF observatory.
By R. Romero

How to put a VLF observatory on-line
By R. Romero

**Create your own streaming VLF Audio
program** By R. Romero



OPERA 2015
Radio-seismic Emission
Permanent Observatory
By R.Romero (ended in
August 2016)

SIGNALS GALLERY

ELF PULSATIONS GALLERY - SRS
Reception by F.Francione (posted
Oct.2014)

ELF - Ground Signals Gallery by Kurt
Diedrich (posted Jul.2013)

WISTLERS GALLERY by Dave Ewer
(posted Jun '10)



Kite Musical Instruments &

Aeolian Musical Instruments

Sound Producing Aeolian Instruments for Kites and other purposes **sounded and powered by the natural wind**; Drachen-Musik-Instrumente und andere Aeolisinstrumente, Musiques Éoliennes pour Cerfs-Volants et autres applications.

by [Uli Wahl](#) (about the author, postal address, workshops, sound-gardens?)

The bamboo kite

" is lifting more pleasure per pound than any other human construction..."





Gargoyle Dragon at Bruchsal-Castle, Germany. home of a beautiful [Museum of Mechanical Musical Instruments](#)

...in 2000 eröffnet und sehr(!) sehenswert/ hörensWert: [Das Orgel-Art-Museum in Windesheim](#) in der Nähe von Bingen/ Rhein... bereits der Ortsname ist Programm...

...ebenso das [Orgelmuseum Schloß Valley](#) südöstlich von München, wo über 60 eingelagerte Orgeln von vergangenen Zeiten und ihrer Restaurierung träumen... Bitte wegen einer **Führung unbedingt voranmelden!**

[Le Musée Suisse de l'Orgue](#)

in Roche Rhonetal knapp südlich des Genfer Sees...

Planes Flown by Dave Meier

[Return to Home](#) [Return to Flying](#)

As of Spring 2003, I have logged PIC time in 66 different airplanes of 29 types and owned four planes (yellow background).
(Click on image or "FAA Registry" link for [FAA registry](#) data) - Other aircraft experiences for which time could not be [logged](#).

American Aviation Trainer AA1A N9471L



1. First lesson 3/27/75, soloed 5/15/75, solo XC 6/11/75, Private checkride 12/1/75, first passenger (my wife) 12/8/75. As of 4/2003 belongs to Jeff Taylor of Jupiter, FL (FD15) Tailwinds Airpark

Grumman American TR2 AA1B N9992L



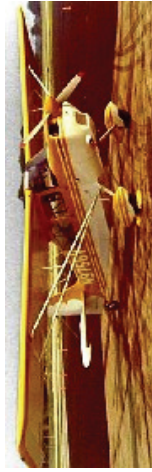
4. New trainer, loaned to club January 14, 1976

Cessna Cardinal C-177 N2290Y



7. Type checkout (#5, 150 hp Cardinal) May 2, 1976 (fixed gear, 150 HP, brown/white - similar to plane in picture)

Bellanca Citabria 7GCAA N8756V



10. Type checkout (#7, Citabria/150), Grant Bales CFI, first tailwheel August 30, 1976 [Subsequently destroyed in nonfatal accident](#).

Cessna Commuter C-150 N704QQ

([FAA Registry](#))

13. First ferry for [Southaire](#), MEM-MIG April 28, 1977

Cessna Skyhawk C172 N5449H



2. Type checkout and first supervised X-C, MEM-LIT-PBF-MEM 7/3/1975 as well my long solo X-C, MEM-SGF-CGL-MEM. In this Skyhawk, I learned not to try out-climbing summer cumulus clouds.

Grumman American TR2 AA1B N9667L



5. First flight as airplane owner January 16, 1976. Cissy obtained her private license in this plane.

Cessna Commuter C-150 N6431K



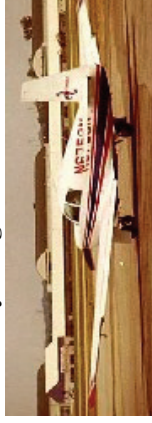
8. Type checkout (#6, Cessna 150 Commuter), first spins June 4, 1976. [Subsequently substantially damaged in nonfatal accident](#).

Grumman American AA5B N74319



11. Type checkout (#8, Tiger) November 13, 1976

Mooney Ranger M20C N6759N



14. Type checkout (#9, 1968 Mooney Ranger), first complex

Grumman American TR2 AA1B N1421R



3. Type checkout, Coastal Airport, Florida, 1/3/1976. The friends and I went here to purchase N9667L. This plane is for sale City, California for \$35.5K as of April 2003.

Piper Cherokee PA-28-140 N5128G



6. Type checkout (#4, 1968 Cherokee 140), CAP aircraft, TN Group 5 Staff April 28, 1976. Many practice and a few real SAR missions were flown in this plane.

Cessna Skyhawk C-172 N3461W



9. New club skyhawk, performed TDY mission June 17, 1976 (A similar plane with with red/white paint shown)

Cessna Skyhawk C-172N N73928

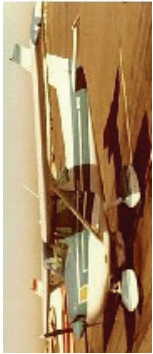
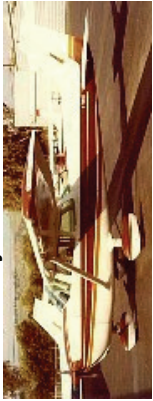
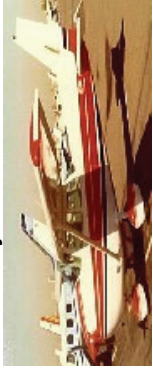
([FAA Registry](#))

12. New club Skyhawk December 24, 1976

Cessna Skyhawk C-172N N75801



15. Ferry for [Southaire](#) from Winchester, TN to Carmi, Ill May 26,

	retractable May 16, 1977 <u>Subsequently damaged in nonfatal accident.</u>	1977. The plane has been upgraded and is for sale for \$69K as of April 2003.
Cessna Centurion C-210M N1736M  16. Type checkout (#10, Centurion), first high performance August 26, 1977. <u>Subsequently damaged in nonfatal accident.</u>	17. <u>Ferry</u> from Strother to MEM, flight of 4 November 15, 1977 Cessna Skyhawk C-172N N738CD (FAA Registry)	Piper Arrow PA 28R-200 N33816  18. Type checkout (#11, Arrow) November 24, 1977. I did a lot of instrument training in this plane, including practice approaches to minimums in actual IFR conditions.
Cessna Skylane C-182Q N759PJ  19. New type (#12, Skylane) <u>ferry</u> from Pawnee to GGI, flight of 2, no radio December 3, 1977 Subsequently used by Indiana Wing CAP.	20. New club Skyhawk December 12, 1977 <u>Subsequently involved in fatal accident.</u> Cessna Skyhawk C-172N N734KV (FAA Registry)	Cessna Skyhawk C-172N N738NB (FAA Registry) 21. <u>Ferry</u> from Strother to CGI, flight of 4, no radio December 22, 1977
Bellanca Citabria 7ECA N8628V  22. New type (#13, Citabria/110) January 2, 1978	23. New type (#14, Cessna II Two), <u>ferry</u> from Strother to MEM February 23, 1978 Cessna 152 II C-152 N49473 (FAA Registry)	Great Lakes 2T-1A-2 N6094L  24. New type (#15, Great Lakes biplane) February 25, 1978. <u>Subsequently ground looped.</u>
Cessna C-152 N49897 (FAA Registry) 25. <u>Ferry</u> from Strother to MIG March 6, 1978	26. <u>Ferry</u> from Strother to MIG March 10, 1978 For sale in Wisconsin as of April 2003.  Cessna 152 II C-152 N49439	Cessna Skyhawk C-172N N738MT (FAA Registry) 27. <u>Ferry</u> from Strother to MEM, no radio March 22, 1978
Cessna C-170B N8151A  28. Type checkout (#16, taildragger) June 3, 1978 (similar plane shown). <u>Subsequently ground looped.</u>	29. <u>Ferry</u> from OLV to HRO August 2, 1978 Cessna Skyhawk C-172N N739VZ (FAA Registry)	Cessna Skylane C-182Q N94945 (FAA Registry) 30. <u>Ferry</u> from Strother to OLV August 2, 1978
Cessna 152 II C-152 N49465 	Cessna Skyhawk C-172N N739KT 	Cessna Skyhawk C-172N N739NQ 

RTTY.COM's CODE-CARD CORNER

Teletype Repairmen and other Data Professionals have almost always carried Credit Card and Ruler-style pocket and wallet references of the various data interchange codes, print element character position charts, and other information of value in their work.

They were often promotional items, trade-show giveaways, and "Badges Of Honor" from tech schools and training courses.

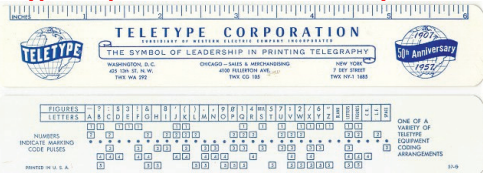
Here we present a few samples for your perusal and enjoyment. If you have one that should be in this area of "Honor", please send us a .gif or .jpg, and it will be given celebrity status.

1. [Model 28 Teletype Code Card](#)
2. [Teletype Corporation 50th Anniversary Code Card](#)
3. [Model 35 TypeBox Code Chart](#)
4. [Canadian Pacific -Canadian National Telecommunications Code Card](#)
5. [Mergenthaler Composition Systems Code Card](#)
6. [General Electric Service USASCII code chart](#)
7. [United Kingdom \(UK\) Post Office International Telegraphs Five Unit Slip Reading](#)
8. [Telecom Australia International Telegraph Code No. 2](#)
9. [Telecom Australia International Alphabet No. 5](#)
10. [Model 33/35 ASCII](#)
11. [Model 32 BAUDOT](#)
12. [Terminet 300 Data Communications Printer](#)
13. [Western Union Keyboard & 5-Channel Tape Codes](#)
14. [Pulse Communications, Inc](#)
15. [CNCPC Telecommunications](#)
16. [Northern Electric NE-32 Teletypewriter](#)
17. [CNCPC Telecommunications System Training FBCDIC/ASCII](#)
18. [CNCPC Telecommunications System Training FIA Modem](#)
19. [Stone Straw Corporation](#)

Model 28 Teletype Code Card



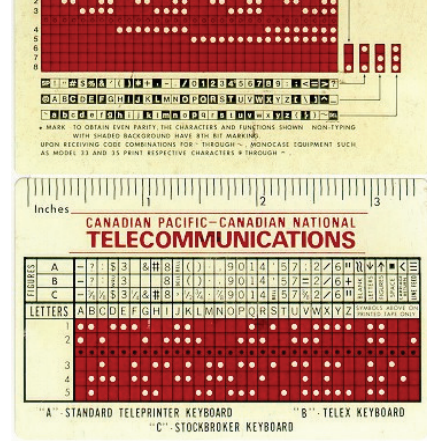
Teletype Corporation 50th Anniversary Code Card



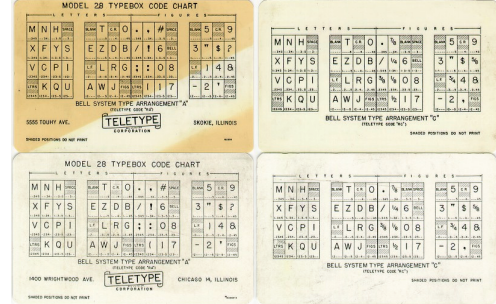
Model 35 TypeBox Code Chart



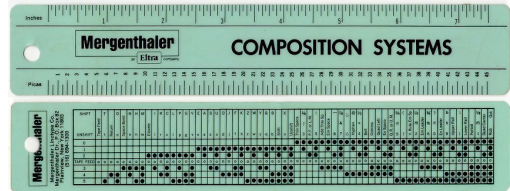
Canadian Pacific -Canadian National Telecommunications Code Card



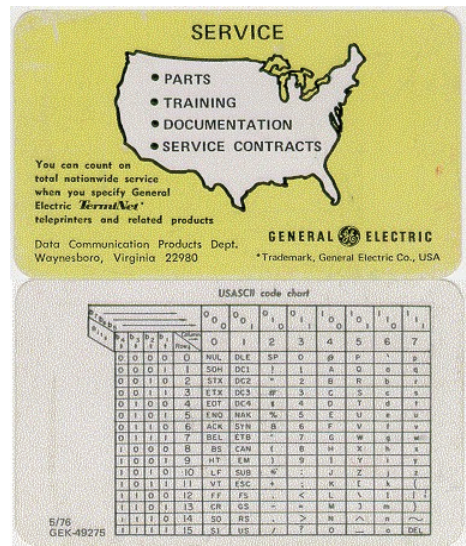
Model 28 Typebox Code Chart



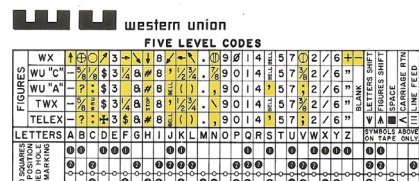
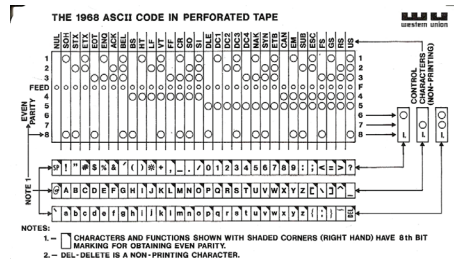
Mergenthaler Composition Systems Code Card



General Electric Service USASCII Code chart



Western Union 1968 ASCII & Five Level Codes



contributed by Russ Miller, WA3FRR (11/30/2011)

contributed by Larry Rice, VK6CP (11/23/2011)

contributed by Larry Rice, VK6CP (12/4/2011)

contributed by Larry Rice, VK6CP (12/4/2011)

machines that make data move

machines that make data move

* WHERE APPROPRIATE, THIS CHARACTER MAY HAVE THE MEANING "NEW LINE" (NL).
 * MARK TO OBTAIN EVEN PARITY, THE CHARACTERS AND FUNCTIONS SHOWN WITH SHADED BACKGROUNDS HAVE 8th BIT MARKING.

contributed by Steve Ripper. (1/7/2012)

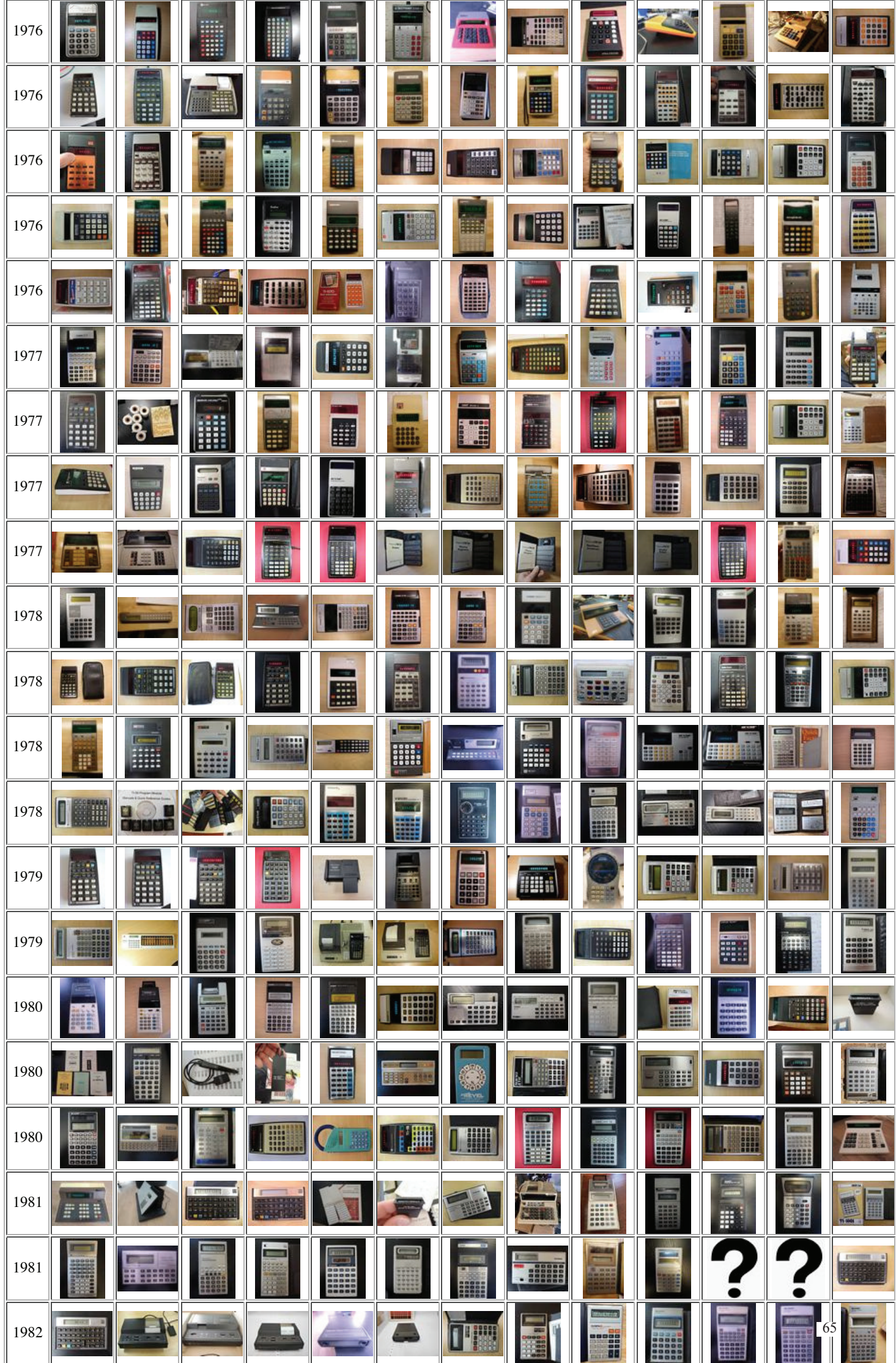
machines that make data move

contributed by Steve Ripper, (1/7/2012)

USASCII code chart

p2 p3 p4 p1 p5		column code chart									
		0	0	0	0	1	1	1	1	1	1
a	b	0	1	2	3	4	5	6	7		
0	0	0	1	NUL	DEL	SP	0	@	P	\	p
0	1	0	1	SOM	DC1	!	1	A	Q	a	q
0	0	1	0	2	STX	DC2	"	2	S	R	r
0	1	1	0	3	ETX	DC3	#	3	C	T	t
0	1	0	1	4	EOT	DC4	\$	4	D	U	u
0	1	1	1	5	ENO	NAK	%	5	E	V	v
0	1	1	0	6	ACK	SYN	&	6	F	W	w
0	1	1	1	7	BEL	ETB	'	7	G	X	x
1	0	0	0	8	BS	CAN	(	8	H	Y	y
1	0	0	1	9	HT	EM	)	9	I	Z	z

Année	https://www.lacoste.link/calc/timeline.htm													
1880														
1941														
1958														
1967														
1971														
1972														
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1973														
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index of on-line museums in my collection

audio

<http://www.johnwolff.id.au/>
<https://www.windmusik.com/index.htm>
<https://education.lenardaudio.com/en/>
<https://www.infinitesimal.eu/modules/index.php@title=Accueil.html>
<https://musicfromouterspace.com/broadcasting>
<https://www.radiomuseum.org/>
<https://www.omroepzendermuseum.nl/index.php/nieuws-archief/174-nieuwsbrief-april-2026-verstuurd>
<https://www.qsl.net/ka4rsz/>
<http://www.felicityradio.altervista.org/pg003.html>
<https://nybhb.com/>
<http://websdr.ewi.utwente.nl:8901/>
<https://www.brundrit.co.uk/>
<http://www.vlf.it/>
<http://www.theradiohistorian.org/>
<https://www.richardsradios.co.uk/>
<https://www.cbmuseum.nl/>
<https://www.piratenpraten.nl/>
<https://www.worldradiohistory.com/index.htm>
<http://www.pa2mr.nl/>

cipher

<https://www.cryptomuseum.com/index.htm>
<https://www.rtty.com/>
<https://www.morsemad.com/>
<https://www.brundrit.co.uk/>
<https://www.ciphermachines.com/>

computation

<https://blog.hnf.de/>
<https://computermuseum.informatik.uni-stuttgart.de/cm003.html>
https://www.macdat.net/laptops/siemens_nixdorf_home.html
<https://oldcomputermuseum.com/>
<http://www.wltp.com/imcpumus.htm>
<https://virtualosmuseum.org/>
<https://www.macintoshrepository.org/>
<https://macintoshgarden.org/>
<https://machut.net/mirrors/classicmac.n3.net/>
<https://www.mortati.com/glusker/>
<https://www.funkygoods.com/calc//index.htm>
<http://www.arithmomuseum.com/index.php?lang=en>
<https://sites.google.com/view/snekoeei-calculator-museum/home/collection?authuser=0>
<http://www.wltp.com/imcpumus.htm>
<http://www.datamath.org/>
<https://www.lacoste.link/calc/timeline.htm>
<https://www.rskey.org/CMS/>
<http://www.calcmuseum.com/>
<http://www.tcoed.de/>
<https://www.wass.net/manua>
<http://pocket.free.fr/>
<http://mycalcdb.free.fr/ls/>
<https://calculator-museum.nl/?additions>
<http://www.computer-modell-katalog.de/welcome.htm>
<http://madrona.ca/e/eec/>
<https://www.robotrontechnik.de/>
<https://csdb.dk/>

<http://oric.free.fr/>

<http://twilighte.oric.org/twinew/start.htm>
<https://web.archive.org/web/20070205071035/http://web.ukonline.co.uk/cliff.lawson/index.htm>
<https://machut.net/>
<https://www.oldcomputers.net/>
<http://www.johnwolff.id.au/>
<http://www.vintagecalculators.com/>
<https://www.oldcalculatormuseum.com/>
<https://oldcomputer.info/>
<http://www.calcuseum.com/>
<http://www.48katmos.freeuk.com/>

gaming

<https://intellivision.us/>
<https://www.intellivision.us/intvlibrary/index.htm>
<https://www.msx.org/>
<http://twilighte.oric.org/twinew/start.htm>
<https://oldcomputer.info/>
<https://www.jaapsch.net/>
<http://www.48katmos.freeuk.com/>
<http://oric.free.fr/>
<https://machut.net/>

hardware

<https://th99.byethost13.com/>
<https://zeptobars.com/en/>
<https://plugsocketmuseum.nl/?ref=DenseDiscovery-388>
<https://www.kingswood-consulting.co.uk/giicm/>
<https://pinouts.ru/>
<https://atlantic-cable.com/Cables/>
<https://techlib.com/default.htm>
<http://www.sparkbangbuzz.com/>

military

<https://www.museumwaalsdorp.nl/en/museum-waalsdorp-2/indexen/>
<https://www.wftw.nl/various.html>

misc

<https://www.vitrinemuseum.ewi.tudelft.nl/>
<http://qann.wikidot.com/>
<https://hugold.pl/>
<http://www.leningrad.su/museum/>
<https://web.archive.org/web/20070527193045/http://www.e-service.net.pl/sumpiowicz/nfsk/default.asp>
<https://www.museumoftechnology.org.uk/>
<http://nostalgynet.ru/>
<http://toastytech.com/guis/>
<https://aresluna.org/attached/>
<https://ftldesign.com/>
<http://www.dentakumuseum.com/>
<http://www.vk2zay.net/>
<http://www.tcoed.de/>
<https://www.webdesignmuseum.org/>
<https://virtualosmuseum.org/>
<https://aobauer.home.xs4all.nl/>

photography

<https://camera-wiki.org/>
<https://collection-appareils.fr/>

telecommunication

<https://www.brundrit.co.uk/>
<https://www.cbmuseum.nl/>
<https://dutchtelephones.com/>
<https://norm51.nl/>

<http://hans.vanpoppell.com/>
<https://telefoniemuseum.nl/telefoniemuseum/>
<https://www.telephonecollectors.info/>
<https://writeanessayfor.me/telegraph-office-com>
<http://www.w1tp.com/#collectors>
<https://www.telephonecollectors.org/>
<https://www.telegraphy.eu/pagina/movies.html>
<https://ftldesign.com/>
<https://www.matilo.eu/>
<https://www.telegraphlore.com/>
<http://w1tp.com/>
<https://www.pa3eki.nl/telefoons/tel.htm>
<http://www.erel.de/>
<https://www.telegraphsofeurope.net/index1.html>
<https://www.cdvandt.org/>
<https://www.teleprinter.net/english/>
<http://www.w1tp.com/imcpumus.htm>
<https://www.rtty.com/>
<https://www.pdp-11.nl/peripherals/tape/pc05-info.html>
<https://aobauer.home.xs4all.nl/>

time keeping

<https://vasilis.nl/clocks/>

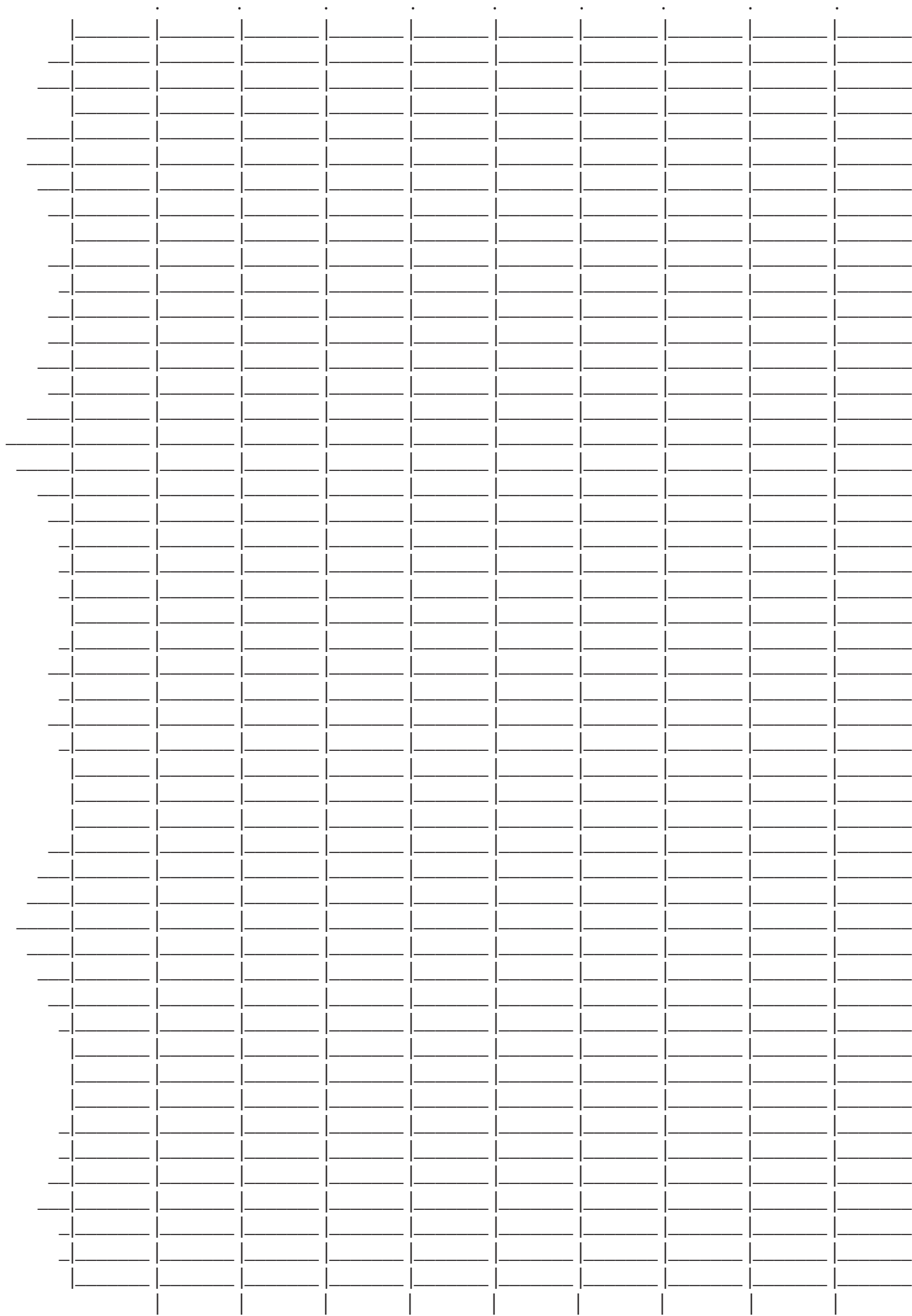
tools

<https://www.supremeinstruments.org/>
<https://museum.dantalion.nl/>
<https://pedewei.home.xs4all.nl/>
<https://toolsforworkingwood.com/>
<https://stevenjohnson.com/>
<http://www.n4mw.com/cpo.htm>
<https://th99.byethost13.com/>
<https://www.scannermuseum.nl/>

typing

<https://typewritermuseum.org/>
<https://www.pdp-11.nl/peripherals/tape/pc05-info.html>
<https://site.xavier.edu/polit/typewriters/index.html>
<https://www.typewriter.be/>
<https://www.silab.it/frox/p101/>
<https://www.teleprinter.net/english/>

As you can see this is an incomplete collection that is lacking a lot of interesting niche media museums. Know of a good one? Let me know and reach out: sevgi@gromits.space



ASCII interpretation of Agnes Martin's Untitled (1960).