

tendencije 5

dodatak

supplement

tomislav mikulić
kompjuterske grafike

tomislav mikulić
computer graphics

kompjuterska vizualna istraživanja

computer visual research

Interes za početke kompjuterske grafike je iznenada porastao u nekoliko proteklih godina. U nekoliko europskih muzeja umjetnosti su organizirane izložbe o pokretu “Nove tendencije”. Bio sam ugodno iznenađen kad su me zamolili više pojedinosti o mojim radovima. Onda sam odlučio da te pojedinosti stavim na raspolaganje svima koji danas istražuju i koji će u budućnosti istraživati ovu temu. Tako je nastao ovaj dodatak.

Over the past few years, interest in early computer graphics has grown. Several European art museums have organized exhibitions about the “New Tendencies” movement. I was pleasantly surprised when they approached me asking for more details about my work. This supplement was created to make these details available to anyone researching this subject now and in the future.

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t. mikulić: dodatak dokumentaciji izložbe

t-5

tendencije 5

zagreb, 1. VI - 1. VII 1973.

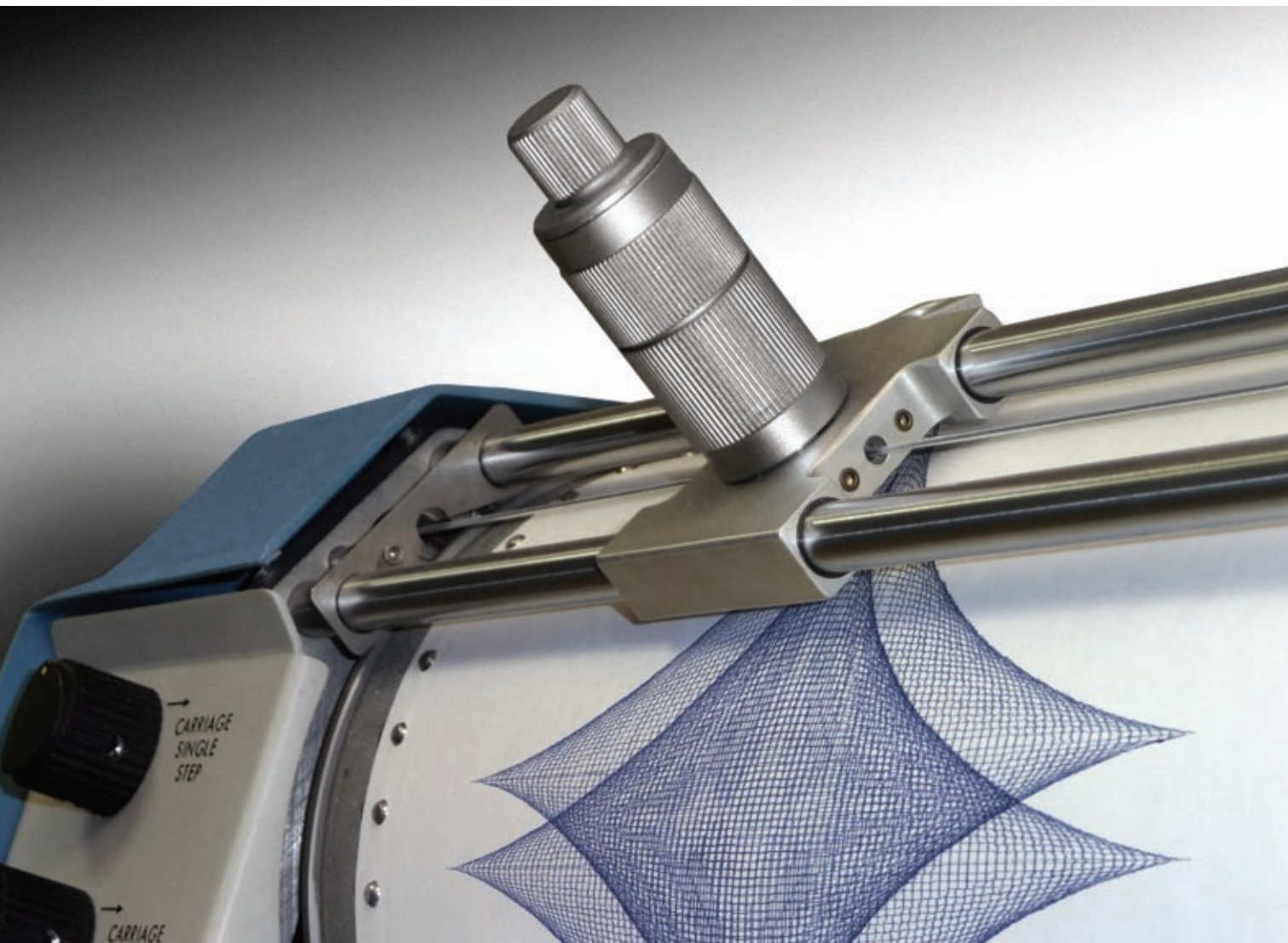
melbourne, august 2009.

t. mikulić: supplement to the documentation of
the exhibition

t-5

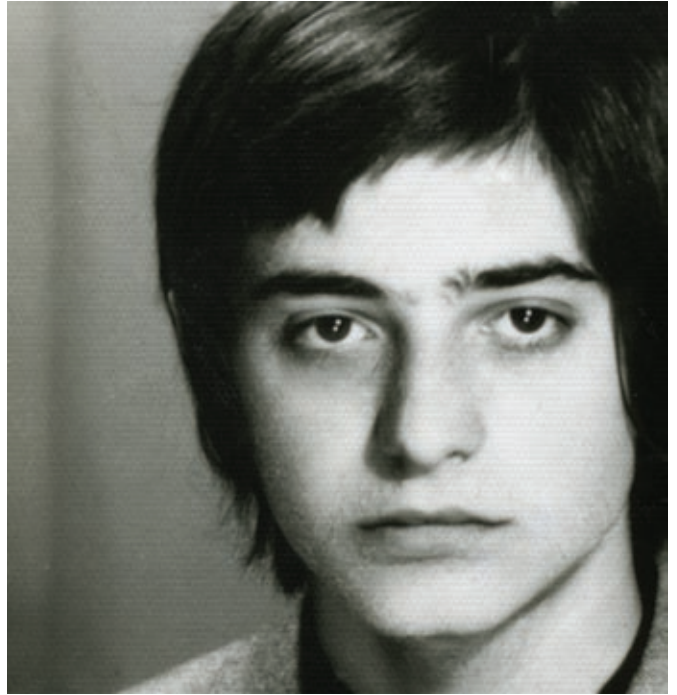
tendencies 5

zagreb, june 1 - july 1, 1973.



Rekonstrukcija na temelju fotografije koju je ustupio David Gesswein, www.pdp8online.com.

Reconstruction based on a photo provided by David Gesswein, www.pdp8online.com.



1971.

Imao sam 18 godina kad sam napravio prve kompjuterske grafike i vjerojatno sam bio najmlađi učesnik pokreta “Nove tendencije”.

1971

I was 18 when I first made computer graphics and was probably the youngest participant in the “New Tendencies” movement.

Nove Tendencije, Zagreb 1961-1973

“Nakon što je 1961. godine u Zagrebu održana izložba konkretne i konstruktivističke umjetnosti, Nove tendencije su se vrlo brzo počele razvijati u dinamičan pokret posvećen ‘vizualnim istraživanjima’. Sredinom 60-ih izazvale su međunarodni boom Op-arta, posebice zbog sudjelovanja na izložbi Responsive eye u njujorškom muzeju MOMA 1965. godine. No taj uspjeh ipak nije Nove tendencije približio njihovim ciljevima – afirmaciji ‘umjetnosti kao istraživanja’, kao ni etabliranju novih oblika njezine distribucije izvan umjetničkog tržišta, što bi pristup umjetnosti trebalo omogućiti svakome. Organizatori Novih tendencija odlučili su aktualizirati svoje strategije, zbog čega su u ljeto 1968. godine u okviru četvrte izložbe Tendencije 4 započele program ‘Kompjuteri i vizualna istraživanja’. Nositelj projekta, tadašnja Galerija za suvremenu umjetnost, a današnji Muzej suvremene umjetnosti, do 1973. godine posvetio se umjetničkom istraživanju pomoću komputera nizom međunarodnih izložbi i simpozija. Umjetnici i znanstvenici iz cijelog svijeta na vrhuncu Hladnog rata predstavljali su svoja djela u Zagrebu. Time su Nove tendencije etablirale jedinstvenu platformu za razmjenu ideja i znanja s područja umjetnosti te prirodnih i tehničkih znanosti. Galerija je također izdavala višejezični časopis ‘Bit international’, čime je Zagreb postao jedan od inicijatora estetskih i medijsko-teorijskih promišljanja, što se u ono vrijeme nije moglo usporediti ni sa čim sličnim u svijetu.”

- Margit Rosen, *Zentrum für Kunst und Medientechnologie (ZKM), Karlsruhe, Germany 2008.*

“Buduća znanstvena istraživanja prve faze kompjuterske grafike u umjetnosti nisu moguća bez temeljite analize događaja u Zagrebu.”

- Christoph Klütsch, *International University Bremen (IUB), Bremen, Germany 2005*

New Tendencies, Zagreb 1961-1973

“Commencing with an exhibition of Concrete and Constructive Art, Nove tendencije, in Zagreb, in 1961, the New Tendencies rapidly developed into a dynamic movement dedicated to ‘visual research’. Around the mid 1960s, the New Tendencies triggered an international Op-Art-Boom, which was endorsed by participation in an exhibition entitled The Responsive Eye, at the New York MoMA, in 1965. However, success brought the New Tendencies no closer to its aims: the assertion of ‘art as research’ and the establishment of new forms of distribution beyond the art market, which should be accessible to everyman. The organizers of the New Tendencies decided to bring their strategy up-to-date and, in the summer of 1968, initiated in the context of the fourth exhibition, Tendencije 4, the program ‘Computer and Visual Research’. Until 1973 the supporting institution of the New Tendencies, the former Gallery of Contemporary Art Zagreb – today the Museum of Contemporary Art – had dedicated itself to artistic research by computer with a series of international exhibitions and symposia. At the peak of the Cold War artists and scientists throughout the world presented their work in Zagreb. The New Tendencies thus established a unique platform for the exchange of ideas and experiences from the area of art, the natural sciences and engineering. With the multi-lingual journal Bit international (1968-73, 9 numbers) Zagreb became a point of initiation for aesthetics and media-theoretical thought.”

- Margit Rosen, *Zentrum für Kunst und Medientechnologie (ZKM), Karlsruhe, Germany 2008.*

“For a further scientific analysis of the first phase of graphical computer art, a deeper look into the events in Zagreb will be indispensable.”

- Christoph Klütsch, *International University Bremen (IUB), Bremen, Germany 2005.*

Rosen, Margit. “Bit International, [New] Tendencies, Computer and Visual Research, Zagreb 1961-1973”. *Zentrum für Kunst und Medientechnologie (ZKM), Karlsruhe*. 18. January 2009. [Online] http://www02.zkm.de/bit/index.php?option=com_content&task=view&id=12&Itemid=30

Klütsch, Christoph. “The summer 1968 in London and Zagreb: Starting or end point for computer art?”. *Proceedings of the 5th conference on Creativity & cognition*. London, UK 2005. pp 109 - 117. ISBN 1-59593-025-6.

S izložbe *Tendencije 5* u Zagrebu 1973. god.

From the exhibition *Tendencies 5* in Zagreb in 1973.



Photo by Mitja Koman.
© MSU | Museum of Contemporary Art, Zagreb.

S izložbe *Bit International - [Nove] Tendencije* održane u Grazu u Austriji 2007. god. i u Karlsruheu u Njemačkoj 2008. god.

From the exhibition *Bit International - [New] Tendencies* held in Graz, Austria in 2007 and in Karlsruhe, Germany in 2008.

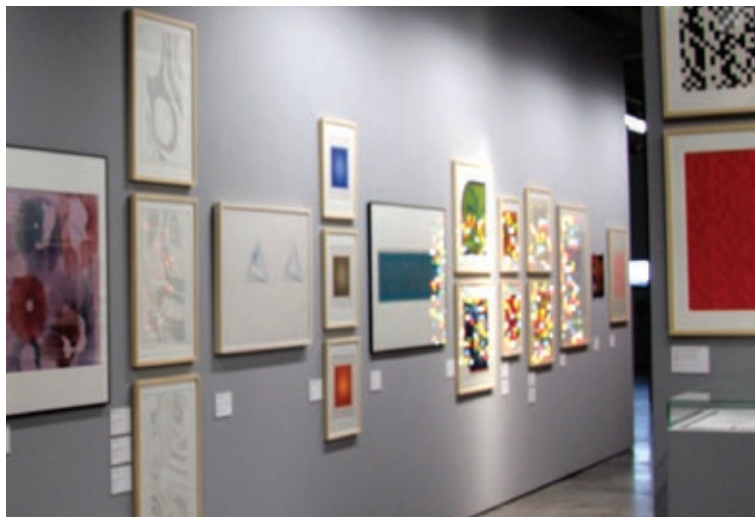
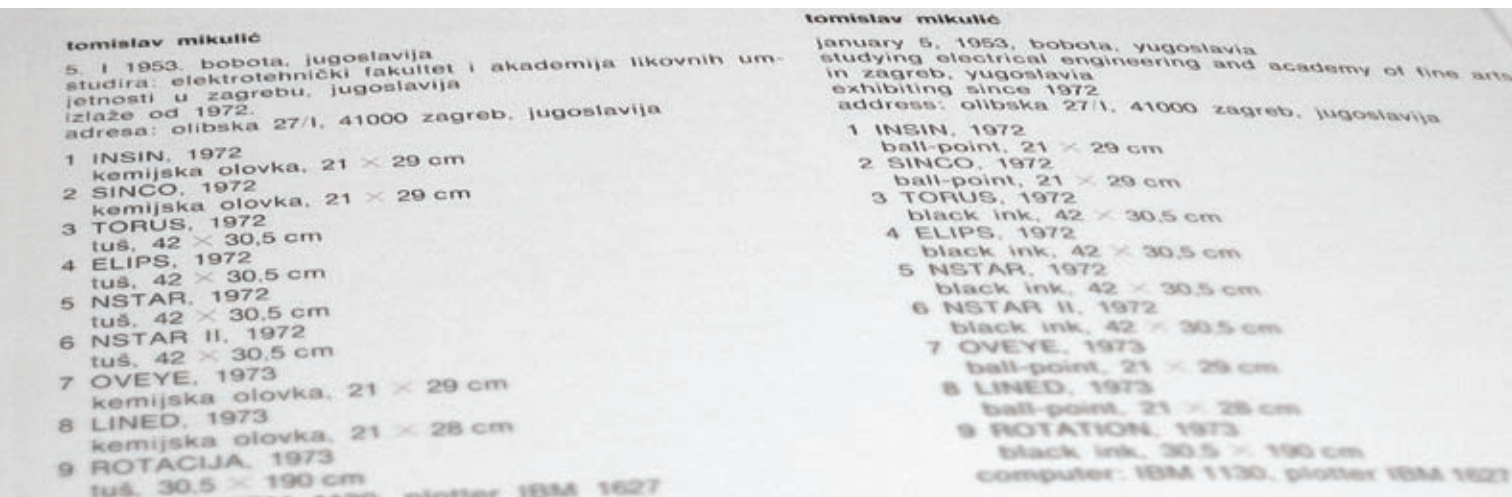


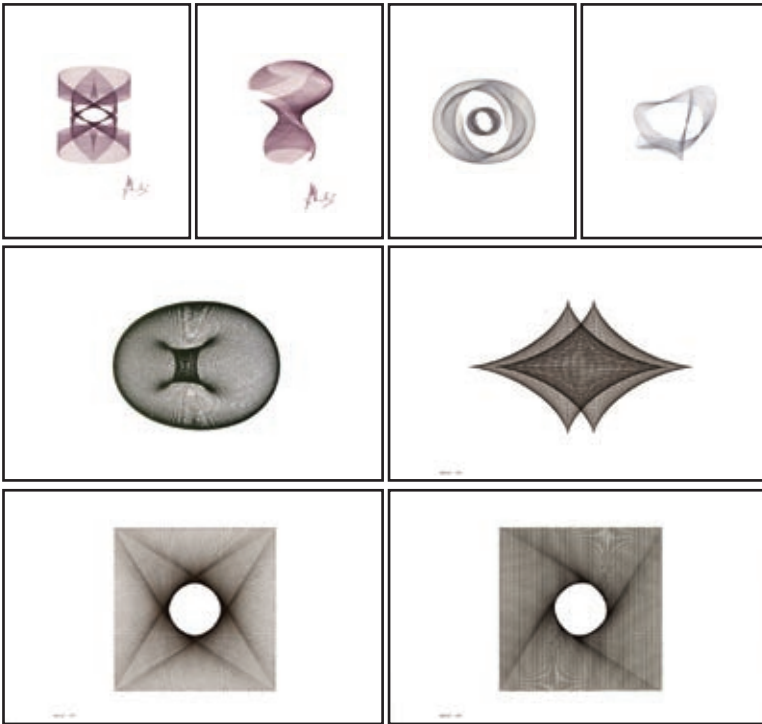
Photo by Margit Rosen.
© ZKM | Center for Art and Media, Karlsruhe.

Popis grafika u katalogu izložbe T-5. Svaka je bila označena brojem od 1 do 9 napisanim olovkom u gornjem lijevom kutu.

List of graphics in the catalog of the T-5 exhibition. They were numbered 1-9 in the upper left corner with pencil.



Exhibited graphics



9

1

2

3

4

5

6

7

8

1 **SINCO** (Sinus cosinus)

1972, 210 x 280 mm

Ballpoint, Purple ink

Signed "Mikulić" mechanically, type 1

2 **INSIN** (Interrupted sinus, Vase)

1972, 210 x 280 mm

Ballpoint, Purple ink

Signed "Mikulić" mechanically, type 1

3 **OVEYE** (Oval eye)

1972, 210 x 297 mm

Ballpoint, Black ink

Unsigned

4 **LINED**

1972, 210 x 280 mm

Ballpoint, Black ink

Unsigned

5 **TORUS**,

1972, 420x305mm

Ink

Signed "MIKULIC 1972", mechanically, type 2
12" paper roll type 2 with perforations

6 **ELIPS**

1972, 420x305mm,

Ink

Signed "MIKULIC 1972", mechanically, type 2
12" paper roll type 2 with perforations

7 **NSTAR**,

1972, 420x305mm,

Ink

Signed "MIKULIC 1972", mechanically, type 2
12" paper roll type 2 with perforations

8 **NSTAR II** (Combined with Letraset lines),

1972, 420x305mm,

Ink

Signed "MIKULIC 1972", mechanically, type 2
12" paper roll type 2 with perforations

9 **ROTATION** (Seven drawings for animation),

1973, 1900 x 305 mm,

Ink

Signed "MIKULIC 1973", mechanically, type 3
12" paper roll type 2 with perforations

Hardware and software used

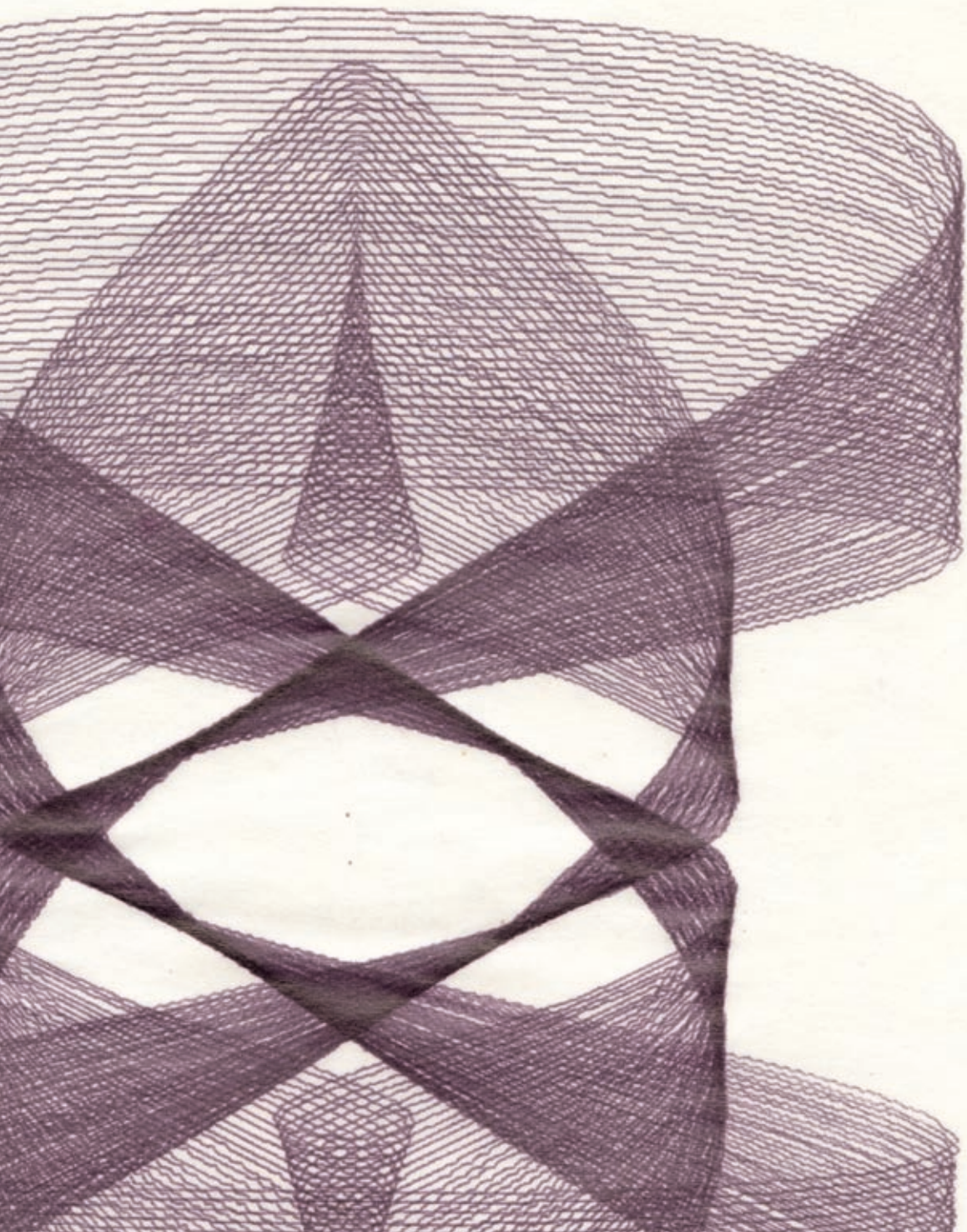
Computer: IBM 1130

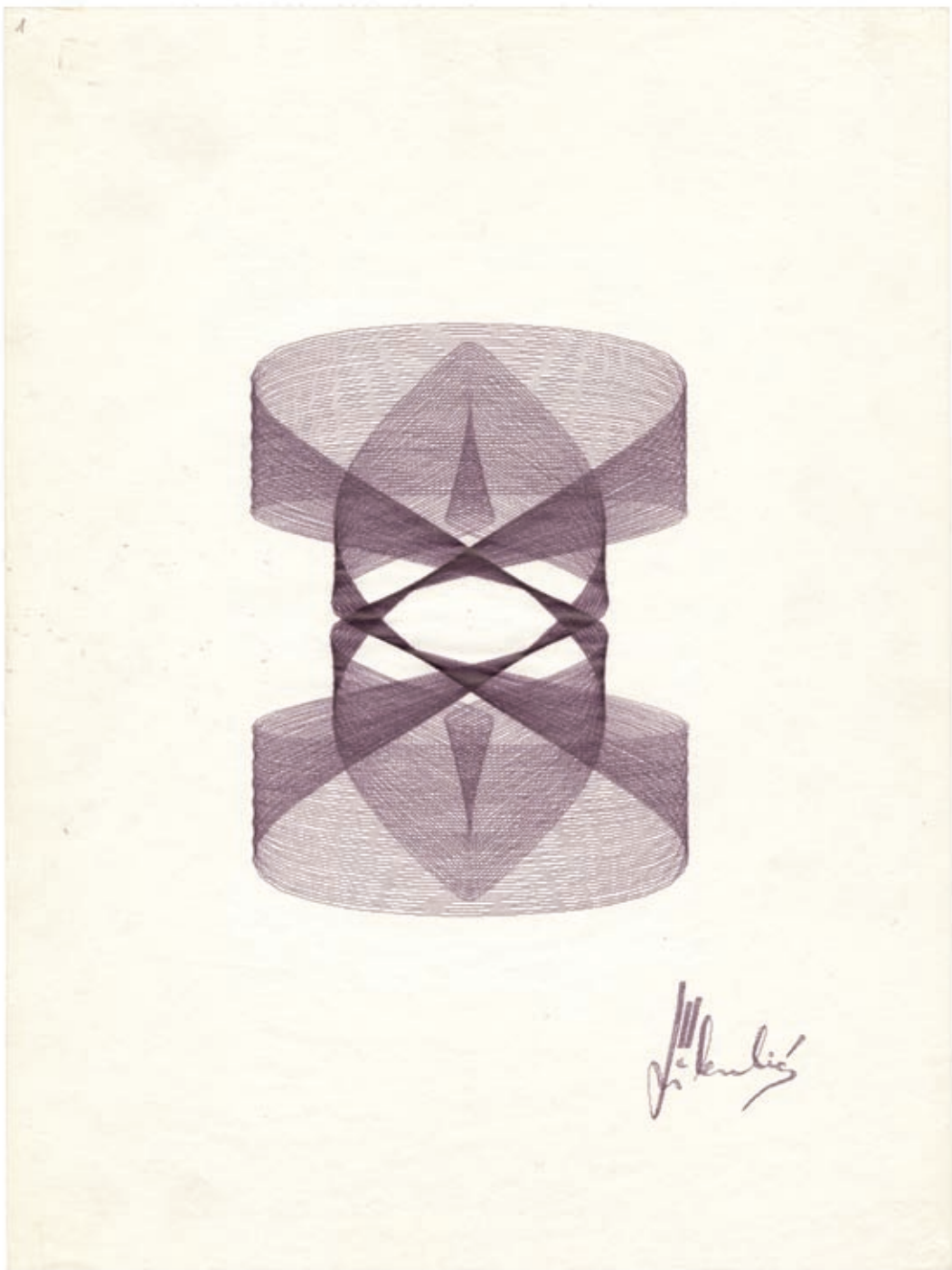
Plotter: IBM 1627 (Relabeled Calcomp 565,
12" Incremental drum plotter)

Software: A separate program for each drawing was
developed in FORTRAN by T. Mikulić.

Location: Faculty of Electrical Engineering
University of Zagreb,
Unska 3, Zagreb, Croatia

In 1994 the Faculty changed its name, becoming the
Faculty of Electrical Engineering and Computing.

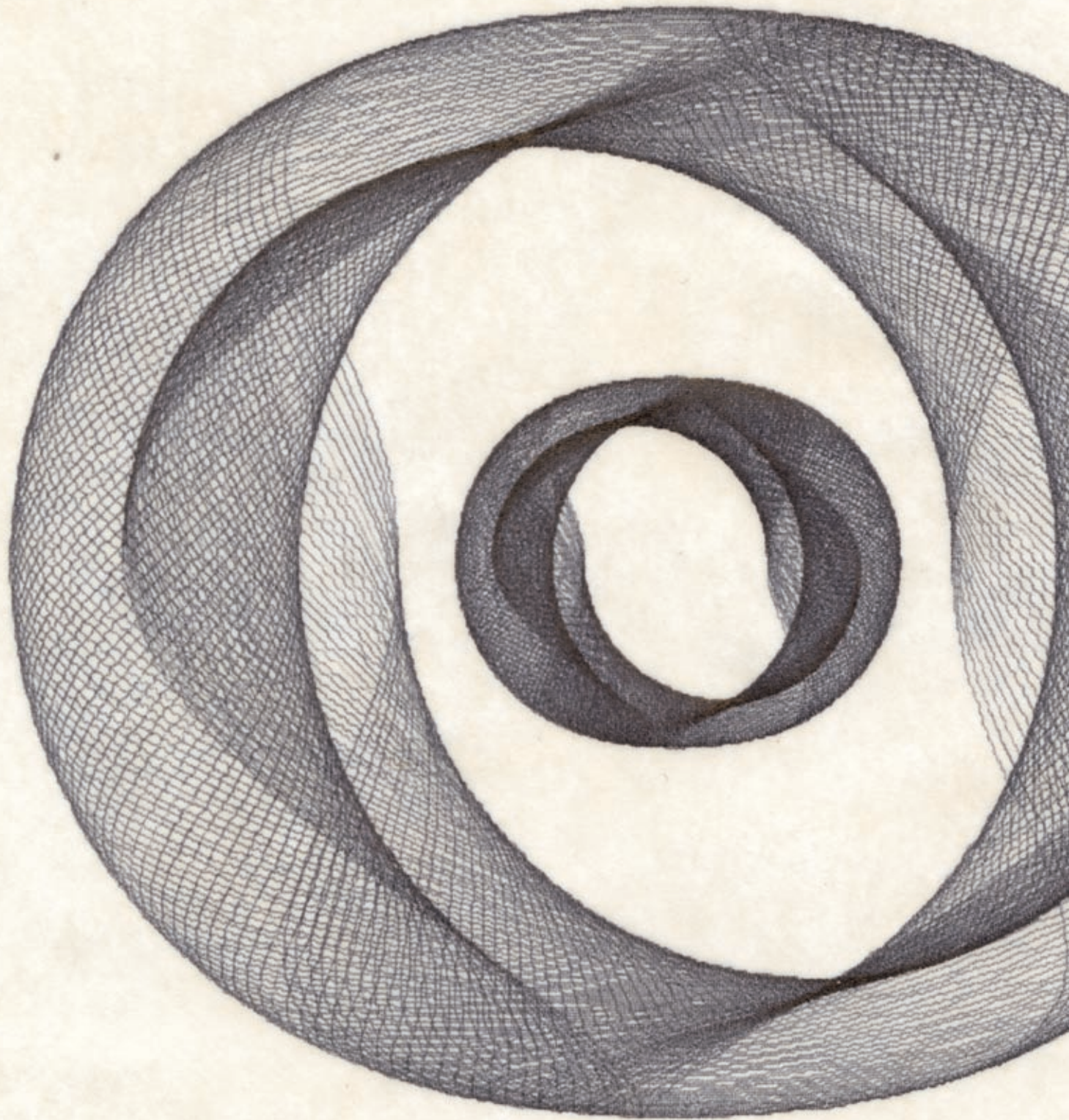


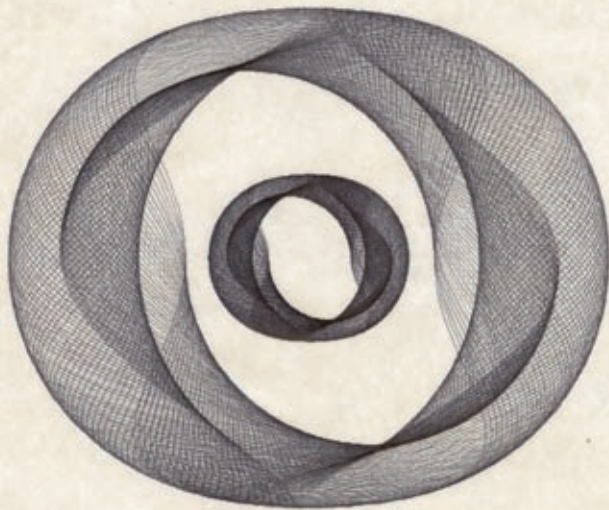


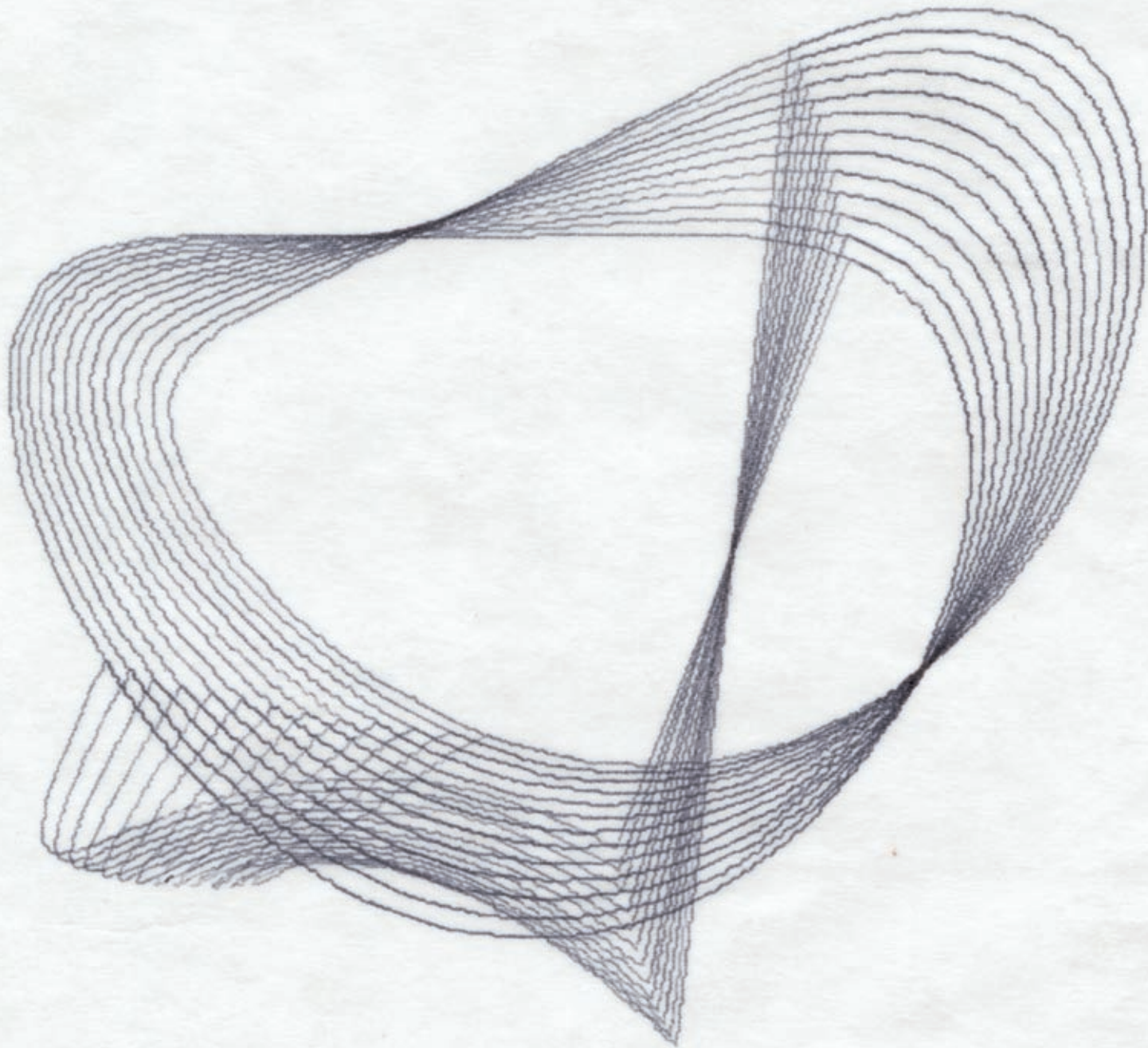


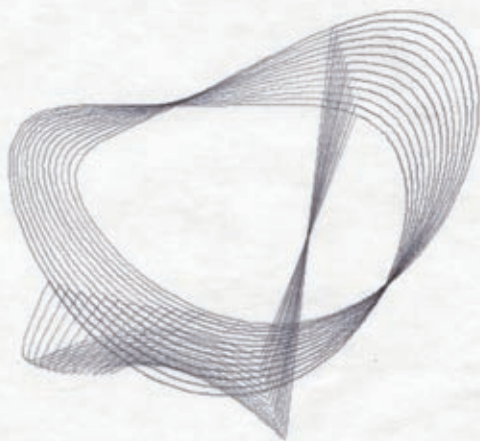


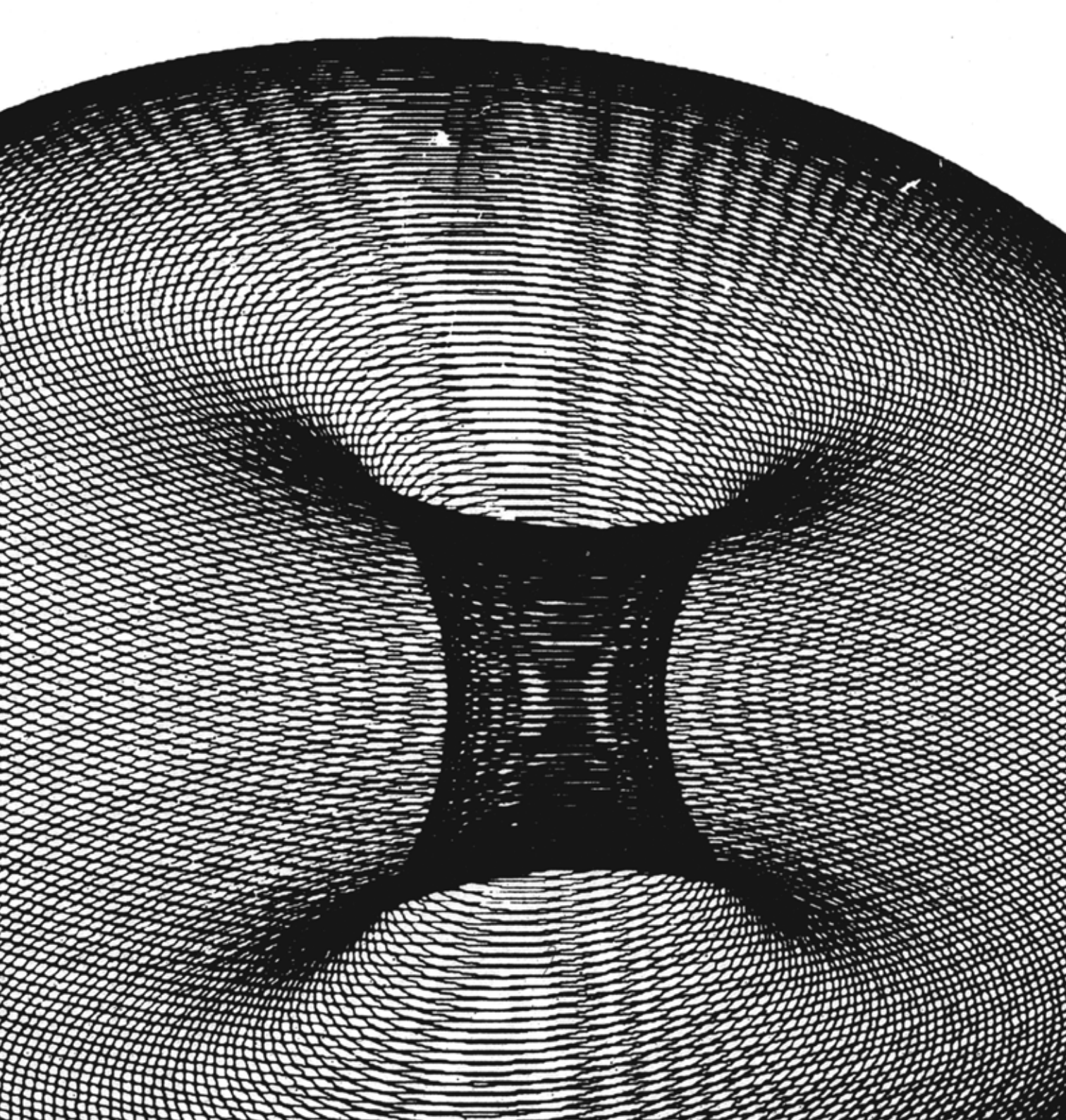
J. K. K. K.













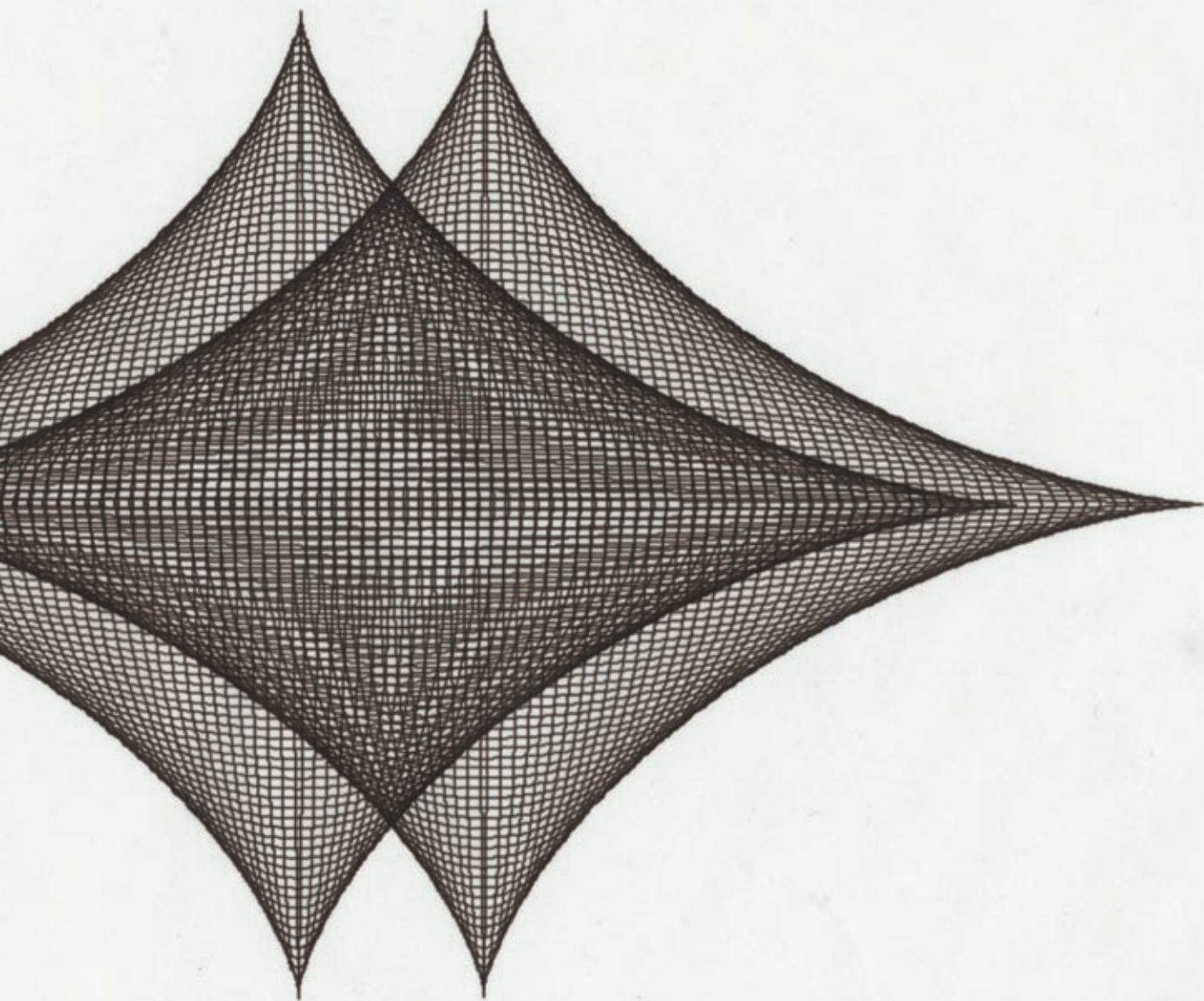
NR411 - 1970

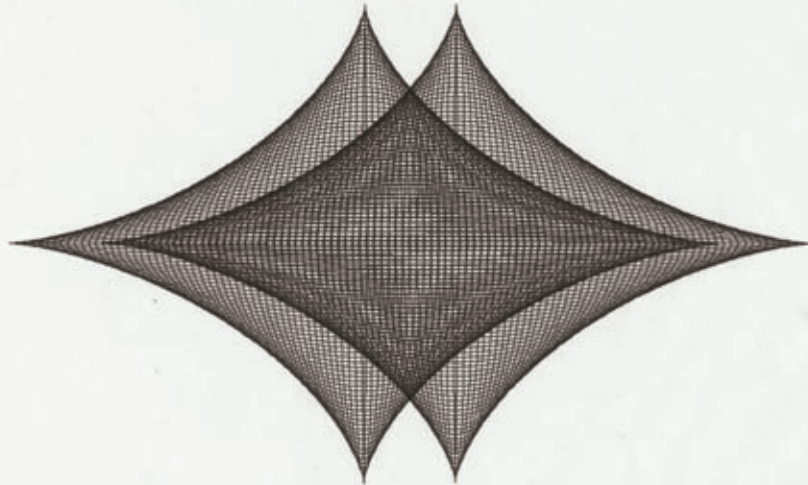
CALIFORNIA COMPUTER PRODUCTS, INC. ANAHEIM, CALIFORNIA CHART NO. 00

MADE IN U.S.A.

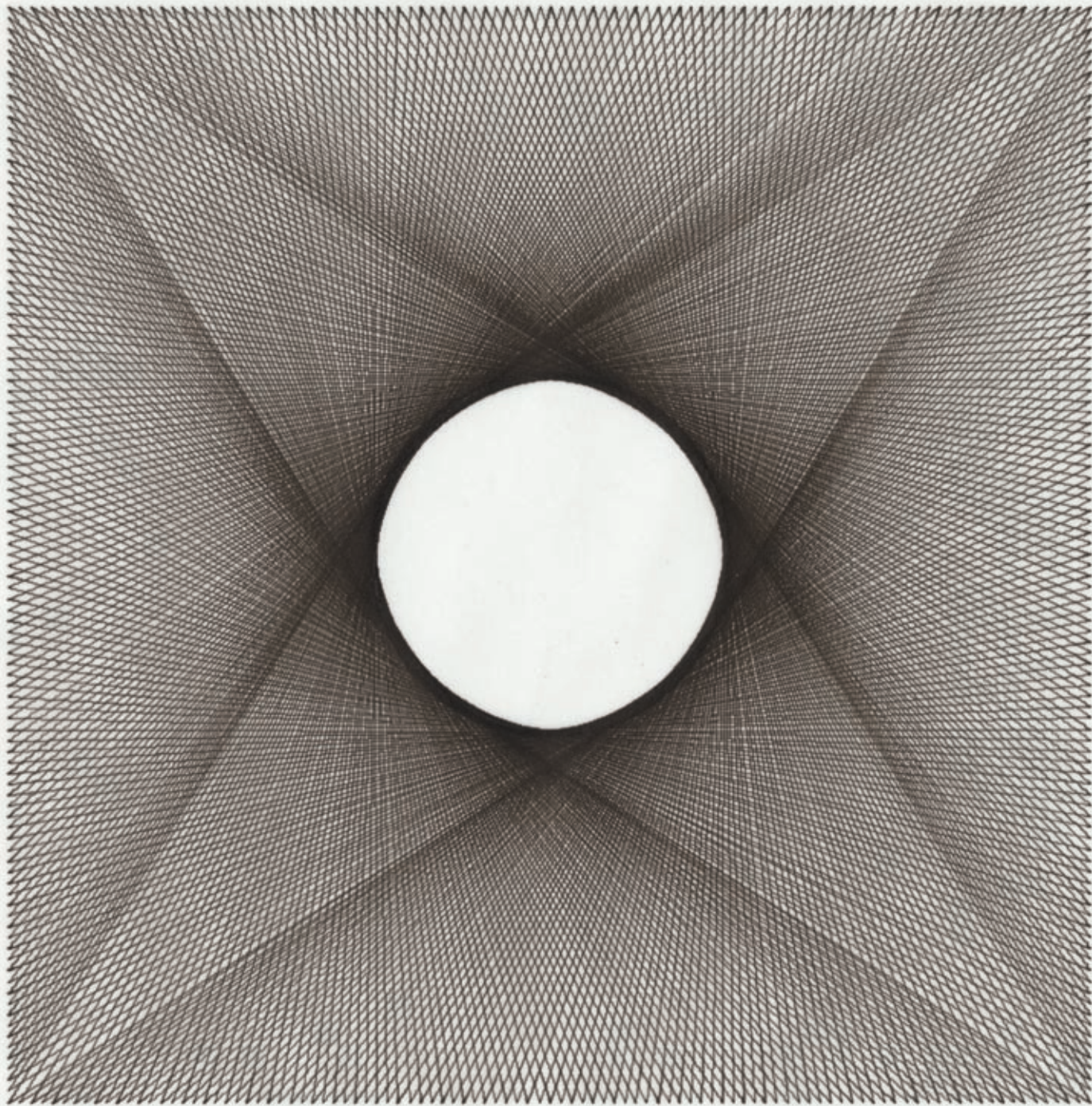
400

CALIFORNIA COMPUTER PRODUCTS, INC.

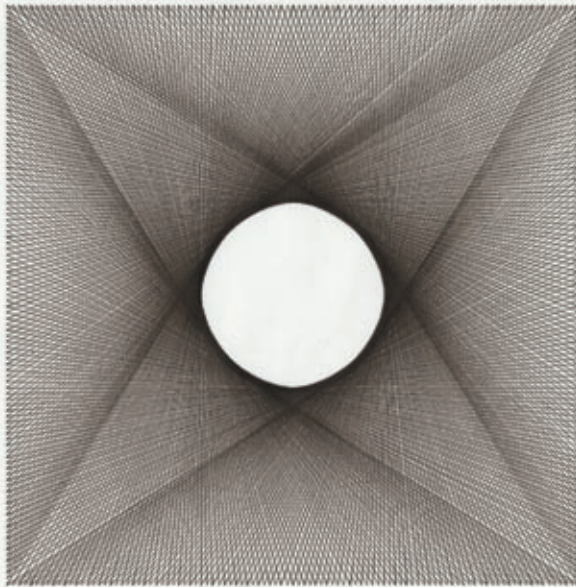




MDLJC - 1570



7

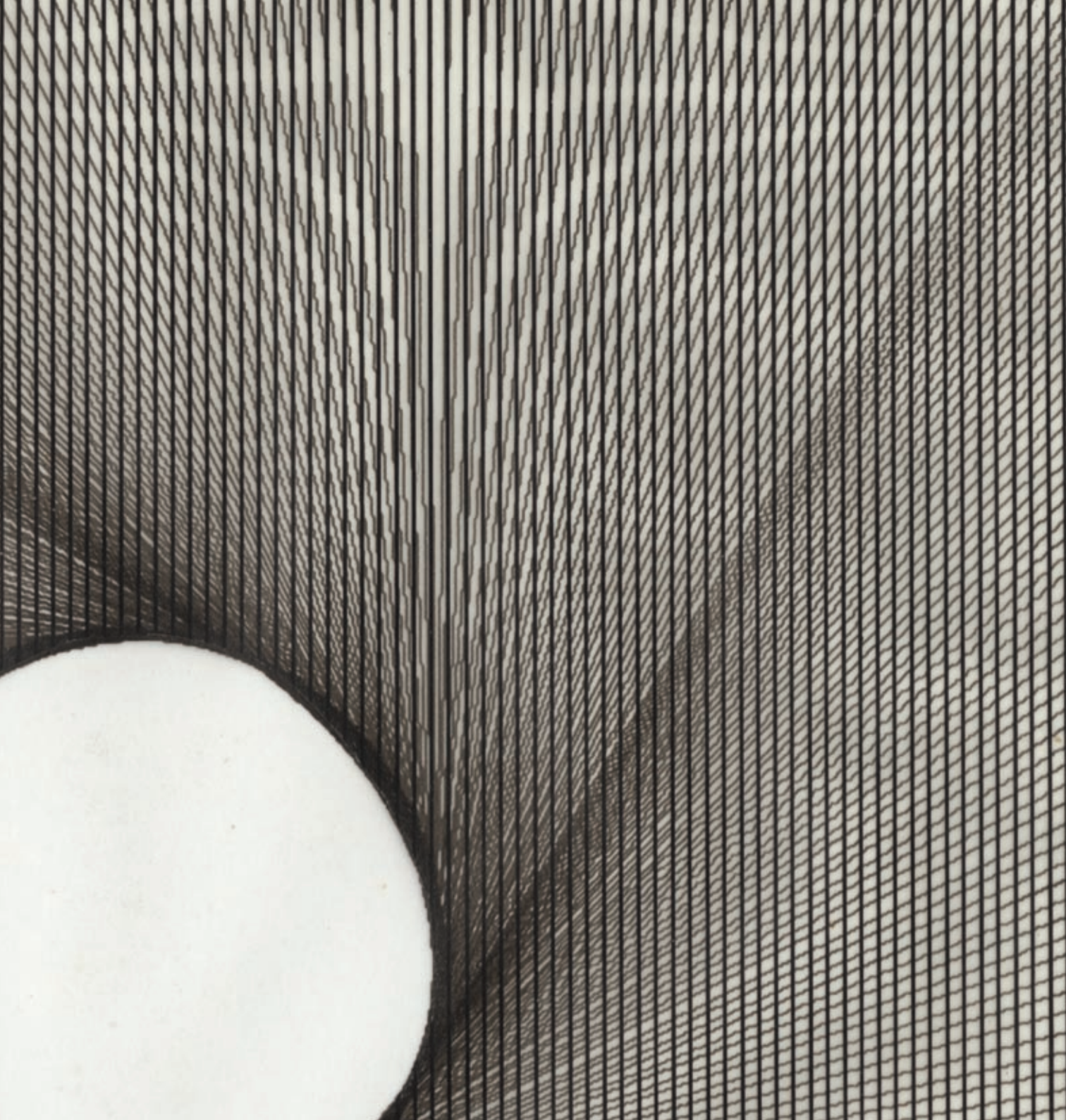


IDEALIC - 1572

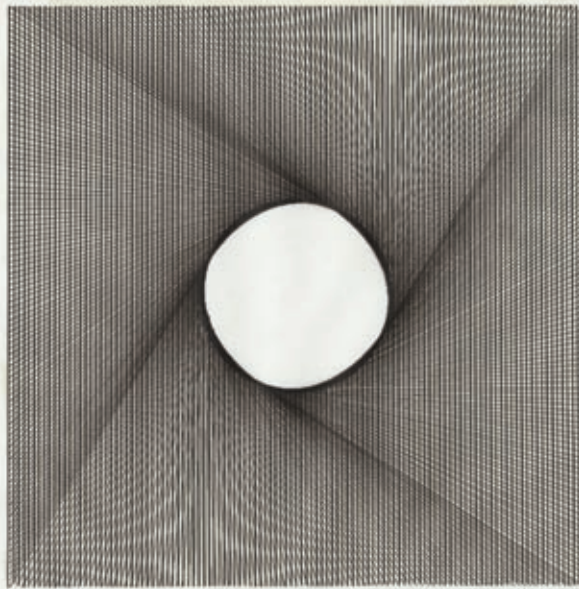
CALIFORNIA COMPUTER PRODUCTS, INC. ANAHEIM, CALIFORNIA CHART NO. 00

MADE IN U.S.A.

CALIFORNIA COMPUTER PRODUCTS, INC.



8



NONLIC. 1572

CALIFORNIA COMPUTER PRODUCTS, INC. ANAHEIM, CALIFORNIA CHART NO. 60

MADE IN U.S.A.

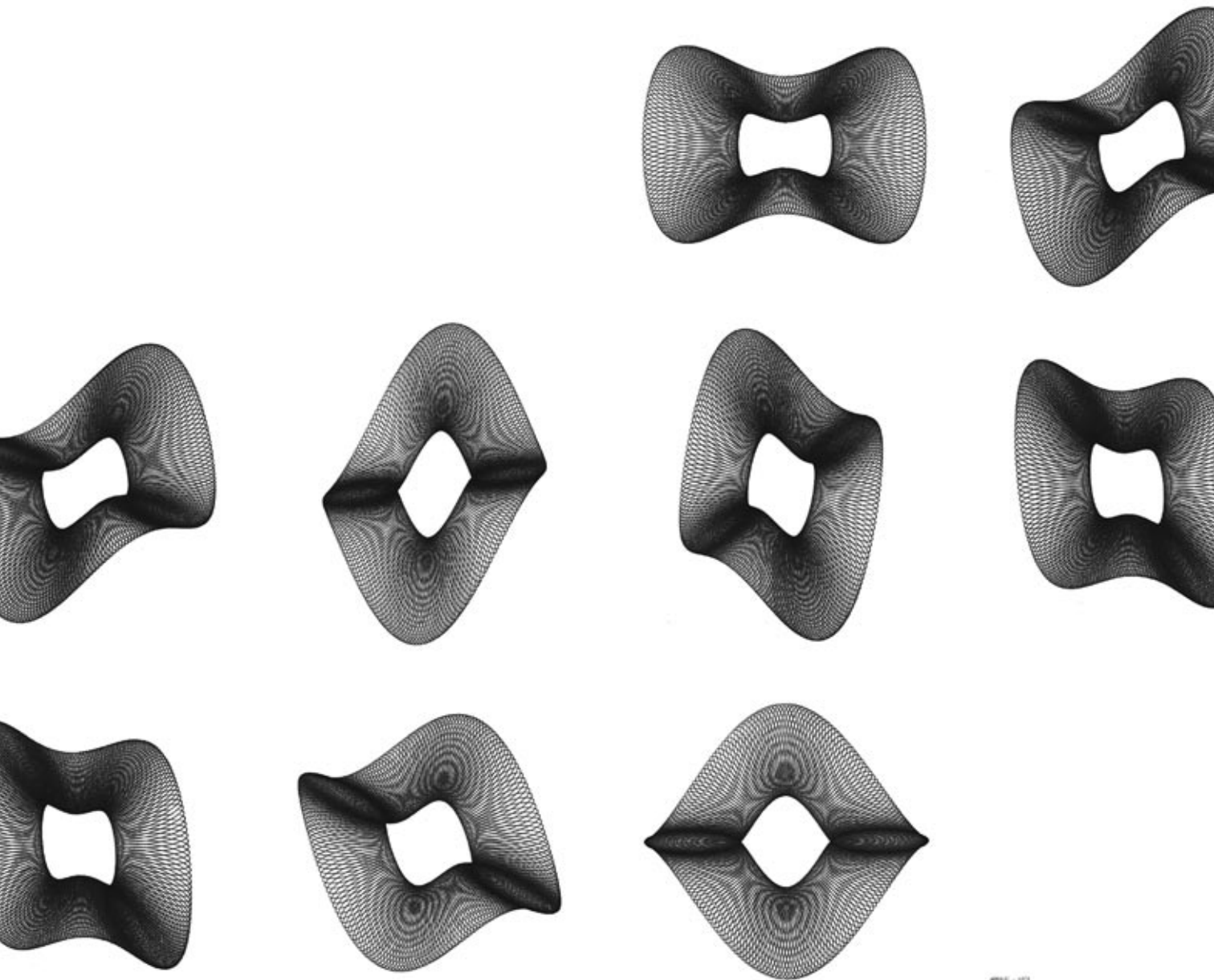
CALIFORNIA COMPUTER PRODUCTS, INC.





Ovaj niz crteža je prikaz buduće animacije. Sekvenca "Rotacija" animirana je dvije godine kasnije (1975. godine) na 16 mm filmu.

This is a concept for an animation. The sequence "Rotation" was animated on 16 mm film two years later. (1975)



Snimanje animacije na 16 mm film s kamerom
Beaulieu R16 u Multimedijском centru (MMC)
Referalnog centra Sveučilišta u Zagrebu 1976. god.

Filming an animation on 16 mm film with a Beaulieu
R16 camera at the Multimedia Center (MMC) of the
Referral Center at the University of Zagreb in 1976.



Photo by V. Petek

2008
Author at Monash University
in Melbourne, Australia



Kako smo živjeli početkom sedamdesetih

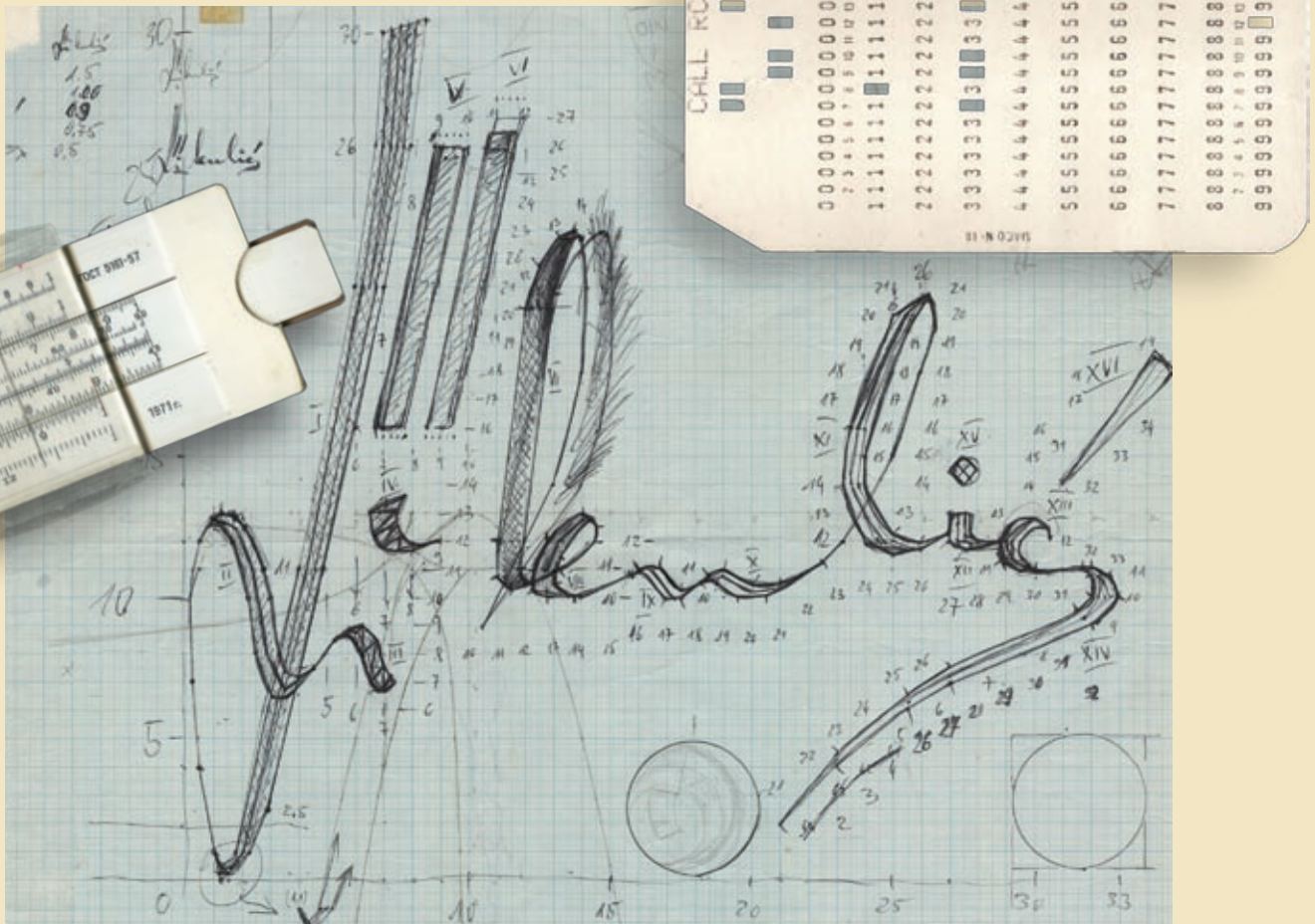
Bez kalkulatora smo morali računati u srednjoj školi uz pomoć “Logaritamskih tablica” a na fakultetu uz pomoć mehaničkog logaritamskog računala. Televizori su bili crno-bijeli i bez daljinskog upravljača. Ružne vijesti su dolazile iz Vijetnama a lijepe su došle iz Woodstocka i s otoka Wighta. O Kubricku smo razgovarali više nego o Lindi Lovelace. Svi smo znali što je Neil Armstrong rekao kad je zakoračio na Mjesec. Slušali smo kako studentski nemiri kulminiraju u Europi. Tamo nisu nikad čuli kako brutalno komunisti smiruju nemire u Hrvatskoj. Glazbu smo slušali s gramofonskih ploča koje su pucketale kroz jedva razumljive zvučnike kod kuće ili užasno glasne u diskotekama. Nismo si mogli kupiti Coca Colu ni traperice. Nisu postojale video igre, kućni kompjuteri, Internet, digitalne kamere, mobilni telefoni ni video rekorderi. Važne obiteljske događaje smo snimali na 8 mm film. Do 3 minute. Pisali smo rukom ili mehaničkom pisačom mašinom. Tekst smo morali dobro smisliti unaprijed jer ga nismo mogli mjenjati.

Poznanstva smo tražili na plesu i sportskim terenima. Cure su nosile što kraće haljine a dečki što dužu kosu. Aute su imali samo roditelji. Nadali su se da će im djeca postati doktori ili znanstvenici. Mi zaljubljeni u umjetnost smo ih jako razočarali.

Our life style in the early seventies

We had to do arithmetic in school without calculators. We used “Logarithmic tables” in high school and slipsticks at uni. Television was black and white and without a remote control. Bad news were coming from Vietnam while good news came from Woodstock and the Isle of Wight. We were talking about Kubrick more than about Linda Lovelace. We all knew what Neil Armstrong said. We knew that student riots were culminating across Europe, but they never heard about how brutally the communists silenced the riots in Croatia. We listened to music off crackling vinyls, through poor speakers at home or too loud ones at a discotheque. We couldn't buy a Coke or a pair of jeans in a store. Video games, PCs, the Internet, digital cameras, mobile phones and home VCRs did not exist. We filmed home videos on 8 mm film, up to three minutes in duration. To write, we used a pen or a typewriter. We had to think ahead because we could not edit the text afterwards.

We went to the disco to meet girls or played sports with friends. Girls wore short skirts and boys wore long hair. Only parents had cars. They expected their kids to become doctors or scientists one day. And some of us broke their hearts when we chose to be artists.



MIKUL(IC)

Imena funkcija u Fortranu nisu mogla imati više od pet slova. Nazvao sam funkciju koja je crtala moj potpis MIKUL s varijablom IC. Neki kolege su to vidjeli i počeli me zvati Mikul od Ic.

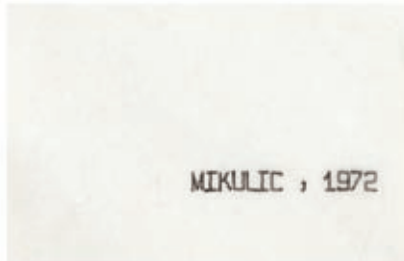
MIKUL(IC)

Function names in FORTRAN were restricted to five letters in length. So I named the function that drew my signature MIKUL with an argument IC. Some friends saw it and called me Mikul of Ic.

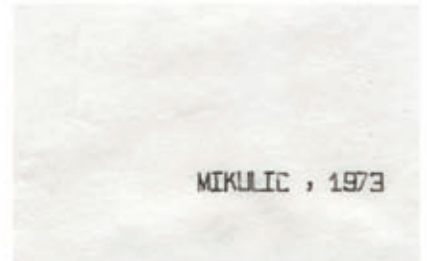
Type 1 (1971-72)

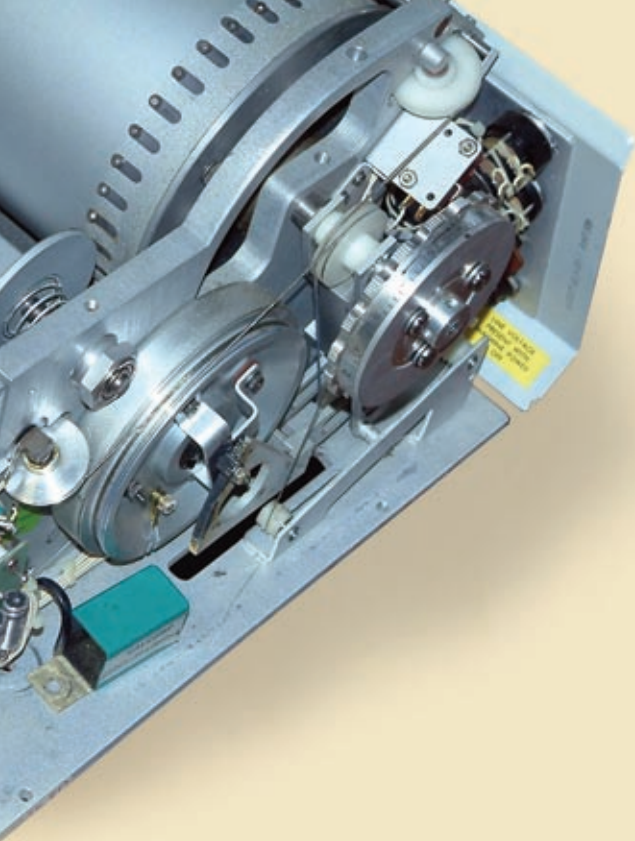


Type 2 (1972)



Type 3 (1973)





Calcomp plotter internals

Photo courtesy of David Gesswein, www.pdp8online.com

I am deeply grateful to:

Professor **Alfred Žepić** who taught me to program in FORTRAN, provided me with excessive amounts of computer time and made humorous comments on my drawings,

Zoran Lerch for introducing me to the plotter,

Braco, Brk, Maja, Mira, Tana, Vasiljka and the other staff at the Computer center at ETF for their endless patience,

Boris Kelemen, Mićo Bašičević, Božo Beck, Radoslav Putar and the other staff at the Galerije Grada Zagreba for their enormous support,

Ivan Picelj and **John Lansdown** for introducing me to a number of other computer graphic artists in Paris and London,

Dr. Herbert W. Franke for publishing my graphics in many international magazines and books,

Verena Borgmann, Mira Gattin, Margit Rosen, Darko Fritz and many, many others for their interest in my work and encouraging me to dust off my old graphics.

A. Žepić



B. Kelemen



M. Bašičević



B. Beck



R. Putar



I. Picelj



J. Lansdown



A. Franke



V. Borgmann



M. Gattin



M. Rosen



D. Fritz



Kompjuterski centar na ETF-u (Elektrotehničkom fakultetu u Zagrebu) početkom 1970-ih godina.

Kompjuterski sistem se sastojao od centralne jedinice (IBM 1130, 8KB RAM, 1MB HD, 277 KHz) uz koji su još bili plotter (IBM 1627), čitač kartica i linijski štampač. Sistem je bio ograđen staklom da bi se mogao stalno hladiti. U taj stakleni kavez smjeli su ulaziti samo službenici i tehničari. Studenti su imali pristup uređajima za bušenje kartica koji su bili ispred ulaza u staklenu sobu.

Crteže koje je kompjuter izvodio uglavnom po noći mogao sam vidjeti tek slijedećeg jutra. Nisam imao toliko strpljenja pa sam počeo dolaziti noću i pratiti proces crtanja. Poslije bezbrojnih noći provedenih uz prekrasan zvuk plottera postao sam neslužbeni službenik u Centru.

The computer room at ETF (Faculty of Electrical Engineering in Zagreb) in the early 1970's.

The computer system, consisting of a CPU (IBM 1130, 8KB RAM, 1MB HDD, 277 KHz), plotter (IBM 1627), card reader and line printer, was enclosed in an air-conditioned glass room. Only staff and technicians were allowed inside. The off-line card punching machines were available to students in front of the glass room.

As a student, I spent countless nights there, watching the plotting process. Eventually I was permitted inside to operate the plotter myself, and no longer had to wait until the following morning to see the results.



Tehnički muzej u Zagrebu, 2006. god.
Ovdje je održana izložba T-5 1973. god.

Technical Museum in Zagreb, in 2006.
The exhibition T-5 was held in this building in 1973.



Photo by T. Mikulić

Fakultet elektrotehnike i računarstva
u Zagrebu, 2009. godine.

U zimi 1971. god. u ovoj je zgradi počeo moj životni
put u svijet kompjuterske grafike.

Faculty of Electrical Engineering and Computing
in Zagreb, in 2009.

I started out making computer graphics in this building
in winter 1971.



Photo by Dubravko Mikulić

Kompjuterska i klasična grafika

U jesen 1971. godine sam se upisao na Elektrotehnički fakultet u Zagrebu. Iste godine sam počeo raditi kompjuterske crteže.

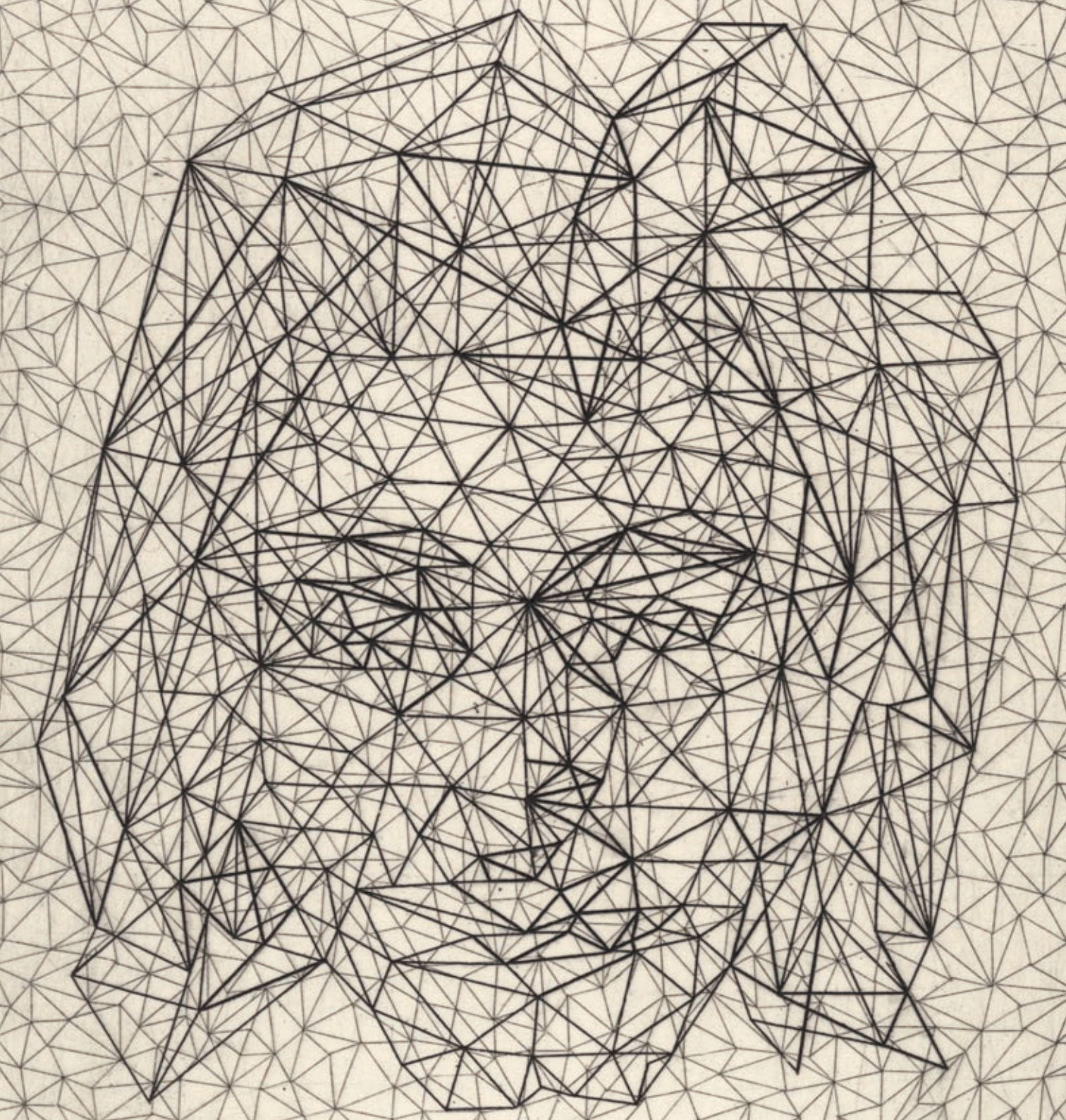
U jesen sljedeće godine upisao sam se na Likovnu akademiju u Zagrebu. Po danu sam studirao crtanje i tradicionalnu grafiku a po noći sam programirao i crtao s kompjuterom.

Computer and traditional graphics

I began my studies at the Faculty of Electrical Engineering in Zagreb in 1971. The same year, I made my first computer drawings.

The following year, I enrolled to study traditional graphics at the Academy of Fine Arts in Zagreb. During the day I was making drawings and etchings. During the night I was programing a computer and plotter.





Tomislav Mikulić, pionir kompjuterske grafike.
Životopis

1953. god. Rođen u Boboti, NR Hrvatska.
1971. god. Upisao se na Elektrotehnički fakultet Sveučilišta u Zagrebu. Počinje raditi svoje prve kompjuterske grafike.
1972. god. Upisao se na Grafički odjel Akademije likovnih umjetnosti u Zagrebu.
Izlaže na Zagrebačkom salonu.
1973. god. Učestvuje na izložbi Tendencije 5.
1974. god. Radi na prvom kompjuterski animiranom filmu u Multimedijskom centru Referralnog centra Sveučilišta u Zagrebu. U časopisu "Start" objavljuje razgovor o tome.
1975. god. Snima sekvence kompjuterski generiranih slika na c/b 16 mm film. Početak kompjuterske animacije u zemlji.
1976. god. Prva samostalna izložba u galeriji "Nova" u Zagrebu. Zabilježena projekcija prvog kompjuterski animiranog filma u zemlji.
1976. god. Piše članak "Medij i kompjuter" u časopisu za umjetnost "Spot". Dobiva dvije nagrade za likovni rad: "Zdravo mladi" i "7 sekretara SKOJ-a".
1979. god. Prezentira animaciju uz predavanje na simpoziju "Umjetnik i kompjuter" u Parizu. Piše članak "TV slika iz kompjutera" u časopisu "Start".
1980. god. Kratki film "Ples" izabran u službenu konkurenciju međunarodnog festivala animacije u Ottawi, Canada.
1980. god. Postaje šef dizajna na Televiziji Zagreb kasnije Hrvatskoj televiziji. Uvodi elektronsku grafiku i kompjutersku animaciju u inertan i zastarjeli odjel grafike. U slijedećih 12 godina vodi tim grafičara i oprema TV program u svom prepoznatljivom umjetničkom stilu.
1984. god. Pobjeđuje na natječaju i radi animiranu špicu Zimskih Olimpijskih igara u Sarajevu.
1986. god. Održava praktične vježbe "Kompjuterska animacija" na Akademiji za kazalište i film u Zagrebu. Angažiran kao mentor za kompjutersku animaciju na Akademiji za film u Beogradu. (1987.)
1988. god. Predaje predmet "Kompjuterska grafika" na XV Matematičkoj gimnaziji u Zagrebu.

Tomislav Mikulić, Computer graphics pioneer.
Biography

- 1953 Born in Bobota, Croatia, then part of Yugoslavia.
- 1971 Begins studies at the Faculty of Electrical Engineering at the University of Zagreb and creates his first computer graphics there.
- 1972 Begins studies in traditional graphics techniques at the Academy of Fine Arts in Zagreb.
Participates in the exhibition "Zagreb Salon."
- 1973 Participates in the exhibition "Tendencies 5."
- 1974 Develops a computer program for animation at the Multimedia Center of the Referral Center at the University of Zagreb. An interview about it is published in the magazine "Start."
- 1975 Records a sequence of computer generated drawings on b/w 16mm film. That is practically the beginning of Computer animation in Croatia.
- 1976 Screens a compilation of the first computer animated films at the first one-man exhibition in gallery "Nova," which gets big publicity.
- 1976 Writes an essay, "Media and the computer" in the art magazine "Spot." Wins two fine arts awards: "Zdravo mladi" and "7 sekretara SKOJ-a".
- 1979 Presents "Computer Animation" with screening at colloquy "L'artiste et l'ordinateur" in Paris. Writes an article "TV picture from a computer" in magazine "Start."
- 1980 Short animated film "Ples" (The Dance) is selected for an official competition at the International Festival of Animation in Ottawa, Canada. It is a 6 minute video of a dance performed by the artist Zaga Živković combined with an animated computer generated background.
- 1980 Becomes the Head of the Design Department at TV Zagreb, later named Croatian TV. Implements electronic graphics and computer animation in an outdated graphics department. Over the next 12 years, he leads a team of 18 artists and develops animation and TV graphics in a unique artistic style.
- 1984 Wins a competition for the opener for the Winter Olympic Games in Sarajevo.
- 1986 Runs a "Computer Animation" workshop at the Academy of Theatrical and Film Arts in Zagreb. Mentors computer animation at the Academy of Film Arts in Belgrade. (1987)
- 1988 Lectures on "Computer Graphics" at the Mathematical High School in Zagreb.

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| <p>1990. god. Radi animirane špice svih značajnih međunarodnih manifestacija u zemlji npr. Europsko prvenstvo u košarci (1989), Natječaj za pjesmu Eurovizije (1990), Europsko prvenstvo u atletici (1990).</p> <p>1991. god. Radi animirane poruke protiv rata u Hrvatskoj koje prenose CNN, BBC i druge televizije u svijetu. Inicira izradu emisije o propagandnoj akciji umjetnika protiv napada na Hrvatsku na austrijskoj televiziji ORF u Beču.</p> <p>1991. god. Odlazi u Australiju gdje otvara vlastiti studio za 3D animaciju.</p> <p>1996. god. Autodesk Inc. uvrštava 3 animirane sekvence u prezentaciju na konferenciji SIGGRAPH.</p> <p>1996. god. Nominiran za AEAF, najveću međunarodnu godišnju nagradu za animaciju u Australiji.</p> <p>1998. god. Pristupa timu za virtualnu grafiku na australskoj sportskoj televizijskoj mreži Channel 7. Na Olimpijadi u Sydneyu 2000 njegove grafike preuzima i američka mreža NBC. Hrvatska televizija (HTV) emitira 10 minutni interview.</p> <p>2002. god. Nominiran za međunarodnu nagradu Computer Space u Bugarskoj za najbolji dizajn multimedijske prezentacije.</p> <p>2002. god. Pristupa timu u Odjelu za unapređivanje na najvećem australskom sveučilištu Monash University.</p> <p>2006. god. Na Svjetskom festivalu animiranog filma u Zagrebu prikazuje retrospektivu rane animacije povodom 30. obljetnice prvog kompjuterski animiranog filma u Hrvatskoj.</p> <p>2006. god. Adobe Systems Inc. dodjeljuje priznanje stručnosti za izradu animacije u Flash programu.</p> <p>2007. god. Zastupljen na izložbi Ex Machina u Bremenu, Njemačka.</p> <p>2007. god. Zastupljen na izložbi Bit International u Grazu, Austrija.</p> <p>2008. god. Zastupljen na izložbi Bit International u Karlsruheu, Njemačka.</p> <p>2009. god. Radovi uvršteni u izložbu 5. Hrvatski trijenale grafike: Pola stoljeća kontinuiteta / 1960.-2009.</p> | <p>1990 Creates animated openers for major international events in country: European Championships in Basketball (1989), Eurovision Song Contest (1990), European Championships in Athletics (1990).</p> <p>1991 Makes animated messages against the war in Croatia, broadcast by CNN, BBC and other networks around the world. Initiates making a TV program at Austrian TV network ORF in Vienna about artists' engagement in the efforts to stop aggression on Croatia.</p> <p>1991 Emigrates to Australia where he establishes his own studio for 3D animation.</p> <p>1996 Three animated sequences are selected by Autodesk Inc. for their showreel, which is screened at SIGGRAPH.</p> <p>1996 Nominated for an Australian Effects and Animation Festival annual award, the most prestigious Australian award for animation.</p> <p>1998 Joins the team working on virtual graphics at Australian television network Channel 7. His graphics developed for the Olympic Games in Sydney 2000 were also broadcast by the American network NBC, among other foreign networks. Croatian television (HTV) broadcasts a 10 minutes interview.</p> <p>2002 Nominated for an international award at the Computer Space arts forum in Bulgaria for the best design of a multimedia presentation on CD.</p> <p>2002 Joins the Advancement team at Monash University, the largest university in Australia.</p> <p>2006 Presents a retrospective of his early animation at the World Festival of Animated Film in Zagreb, sponsored by ASIFA (Association International du Film d'Animation) on the 30th anniversary of the first computer animated film in Croatia.</p> <p>2006 Becomes an Adobe Systems Inc. certified Flash Designer.</p> <p>2007 Included in the exhibition "Ex Machina" in Bremen, Germany.</p> <p>2007 Included in the exhibition "Bit International" in Graz, Austria.</p> <p>2008 Included in the exhibition "Bit International" in Karlsruhe, Germany.</p> <p>2009 Included in the exhibition "5th Croatian Triennial of Graphic Arts: Half a Century of Continuity / 1960-2009"</p> |
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<http://tomislavmikulic.com/>
 Srpanj 2009. godine, Melbourne, Australia.

A media kit is available from the author's web site:
<http://tomislavmikulic.com/>
 July 2009, Melbourne, Australia.

Izložbe / Exhibitions:

- 1972** 7. ZAGREBAČKI SALON, Zagreb (HR)
- 1973** TENDENCIJE 5, Zagreb (HR)
- 1975** PLASTEX ART, Zagreb (HR);
ICCH 2, Los Angeles (USA);
10. ZAGREBAČKI SALON, Zagreb (HR);
MAFAF, Pula (HR)
- 1976** KOMPJUTERSKA ANIMACIJA (1. Samostalna izložba*), Zagreb (HR);
ANNALE, Poreč (HR);
NCC '76, New York (USA);
GENERATIVE COMPUTER GRAPHIK, Stuttgart (D);
MLADI SINEASTI, Zagreb (HR);
INA, Zagreb (HR)
- 1977** COMPUTER GRAPHIK, München (D);
12. ZAGREBAČKI SALON, Zagreb (HR);
BEOGRADSKI TRIJENALE, Beograd (YU);
ICCH 3, Waterloo (CANADA);
SALON MLADIH, Zagreb (HR);
KOMPJUTERSKA ANIMACIJA (2. Samostalna izložba), Zagreb (HR)
- 1978** ZGRAF 2, Zagreb (HR);
13. ZAGREBAČKI SALON, Zagreb (HR);
ART OF THE SPACE ERA, Huntsville (USA);
ÄSTHETIK UND TECHNOLOGIE (UNESCO),
Offenbach am Main (D)
- 1979** KUNST AUS DEM COMPUTER, Ludwigshafen (D);
CYBERNETIC SYMBIOSIS, Berkeley (USA);
INTERNATIONALE JUGENDTRIENNALE,
Nürnberg (D);
ARS ELECTRONICA, Linz (A);
ARTISTE ET ORDINATEUR, Paris (F);
GRAFIKA ŠTO JE TO?, Zagreb (HR);
SALON MLADIH, Zagreb (HR);
INA, Zagreb (HR);
COMPUTER ART, Tokyo (JAPAN);
KOMPJUTERSKA ANIMACIJA (3. Samostalna izložba), Zagreb (HR)
- 1980** 15. ZAGREBAČKI SALON, Zagreb (HR);
KOMPJUTERSKA ANIMACIJA (TM was curator),
Zagreb (HR);
INTERNATIONAL ANIMATION FESTIVAL, Ottawa
(CANADA);
ZAGREB VIDEO, New York (USA)
- 1981** COMPUTER ANIMATION, London (UK);
KOMPJUTERSKA ANIMACIJA (4. Samostalna izložba), Zagreb (HR)
- 1984** KOMPJUTERSKA ANIMACIJA (5. Samostalna izložba), Zagreb (HR)
- 1986** KINERT I ĐACI, Zagreb (HR)
- 1992** 27. ZAGREBAČKI SALON, Zagreb (HR), Awarded;
- 1994** COMPUTER EXPO, Melbourne (AUS),
Pineapplehead Productions showreel
- 1996** SIGGRAPH, New Orleans (USA), Autodesk Inc.
(Kinetix div.) showreel
- 1996** AEAF, Sydney (AUS), Nominated for Annual Award
- 2002** COMPUTER SPACE, Sofia (BUL), Nominated for Annual Award
- 2006** WORLD FESTIVAL OF ANIMATED FILM, Zagreb
(HR), Retrospective of films
- 2006** DIE NEUEN TENDENZEN, Ingolstadt (D)
- 2007** EX MACHINA, Bremen (D)
- 2007** BIT INTERNATIONAL, Graz (A)
- 2008** BIT INTERNATIONAL, Karlsruhe (D)
- 2009** 5th CROATIAN TRIENNIAL OF GRAPHIC ARTS,
Zagreb (HR)

* One-man exhibition (Samostalna izložba) in 1976, 1977, 1979, 1981 and 1984.

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vol. 25, Aug. 1976, pp. 18. [*]; vol. 26, Sept. 1977, pp. 22. [*]
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[*] Article includes a black and white illustration; [**] Article includes an illustration in color.

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