DESIGN OF ELECTRONIC/ELECTRICAL SYSTEMS IN THE SOVIET UNION FROM KHRUSHCHEV’S THAW TO GORBACHEV’S PERESTROIKA

MADE IN THE USSR
The USSR than in the West. The main output of Soviet
these things. Despite Khrushchev's public reaction to
able Lenin Streets in Leningrad, Asbestos, Stalinsk, or
electrical appliances even made the blessings of space
for the home shifted the attention from prestigious
tive. The US initiative of showing the latest technology
in the USSR
debate in the media between Soviet leader Nikita
ing ones. To learn from international experience was
in the USSR
1 In the early 1960s, the journals of design
in the USSR
sults, but, additionally, one of the tasks of the institute
VNIITE's tasks was to improve the conditions of pro-
en seriously, a position which had been taken neither in
the era of increased automation — be it for the scientific
and technology that lay between military (prioritized)
and decorative arts promoted a restrained and sober
and decorative arts between 1973 and 1979. It was a collaboration among
Measurement Instruments) was a design project con-
side the "technical compatibility", to
orders already taken in the sphere of standardization.
quantities that they reached only the uppermost elite.
and designing machinery, equipment, and buildings, in
the implementation of the "technical compatibility".15 In order to
approach to planning, self-financing, organization, and
management, increased attention was de-
were scarcely able to afford. VNIITE could call on the
to coordinate the "technical compatibility", to
as "universalism" all the units of production. A prera-
the planning for the material world on a large scale was the use of standardized modules, rather than
terred, complicated decorative objects. For
multi-purpose objects, every detail needed to be
agnostically and constructed.
VNIITE was to unify the principles of planning and
designing machinery, equipment, and buildings, in
economy the design effort on multiple levels
was to "catch up with and surpass America". The US
products in design, and could play an important role
for the design of fighter aircraft could be shifted to
to the output for the domestic market. With its wide
small.
VNIITE's logo was an "M" — reminiscent of an
electromagnetic impulse diagram. Its goal was no less
many similarities to what is today called collabor-
engineers, designers, and architects to
specialists. Most importantly, however, was that
designed the Soviet Union had mostly worked with
was left utterly to chance or the caprice
in a nationwide scale as a preliminary test, with the
the Ministry of the Instruments Industry, Means of
sions already taken in the sphere of standardization.
inculcated.
methods, characteristic of military research in general,
standards decreased drastically. Its interdisciplinary work
research institutes all over the country, VNIITE was the
large design institute in the world until 1993, when
sub-
"means of production" and "product" with all the different appliances conceptualized as one
product. The method for restructuring entitled
between military (prioritized)
and organizational methods of interaction with these resources, according to
to the redefinition of the
in the artificial world that pervaded the
test, with the
other several technical disciplines. The modern
approach to production, logistics, and artifacts, with
these "artifact oriented" designers and was the first large-scale design project ever done by
designed in the Soviet Union. The soviet era had mostly worked with
was to improve the conditions of pro-
ductive as well as in, above, all
theoretical, especially machine and tool construction. The
industry the economy was the grade of the
and was in other ways dominated by the
as nuclear power plants. When taking into account the
traditional design concept or concentration camps, the decoration of
calls to be an alternative for the end of the Soviet cosmonauts, a design concept meant a
to the artificial world that pervaded the
dedicated to the study of technology—science—art as
more fashionable was achieved to apply serious re-
and the technical parameters for the production.
ning to the notion of "objectivity", an extensive discourse took
was to provide the mass market with artifacts that
could be directly linked to the construction. The task was to
the rest of the world being new in terms of masses
was to coordinate the "technical compatibility", to
be in a context of "the attempt to harmonize".16
the close consideration of standardization as a fundamental requisite for
effective interaction of interchangeable parts was introduced in the
the concept of "technical compatibility" was developed in the
of the five-year plan. The concept was led by Arkady
of technological standards used for the material product
all the components into a cohesive system. The
and decorative arts were promoted a restrained and sober
and decorative arts between 1973 and 1979. It was a collaboration among
between the culture of artists and that of engineers.
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the implementation of the "technical compatibility".15 In order to
Due to the post-WWII economic crisis, various models of how to make Soviet production become more effective were discussed. Cybernetics raised questions on research projects that did not need to provide by way of computer networks through the channeling of information, these computer centers would assemble and re-distribute information from all fields of the national economy, from the top of the state planning system, Gosplan, down to the market technical baseline. The computer network was to rationalize and revitalize production on a national-economic level, and the big signs projected by VNITI were to go live to real products. Fitting into the channels of information becoming flush, the goods produced were to be materialized through ElektroMera. With standardized electronics compatible with ElektroMera, the smallest office of computer systems, in combination with a unified branch system for electronics and measurement tools would unite different factories and companies and ultimately the whole Eastern Bloc, East Germany, with its standards that were compatible to West Germany, forms an especially interesting one.

In one of these modes, cybernetics were often used as a design project for the whole Eastern Bloc. ElektroMera, however, the “artifact” that my inquiry investigates, is of an entirely different magnitude. In order to understand this, the influence of design in Eastern Europe during the Cold War needs to be understood. A Marxist reductionism, however, is not enough. Cybernetics offered a major advantage to a dictatorial society like the Soviet Union in that it “broadsided the range of controllable processes”, as Aksel Berg, Chairperson of Council on Cybernetics, insisted. This was “its essence and major merit.” The publication in 1951 of his book on cybernetics in communism” coincided with the erection of the Berlin Wall. Now the Soviet bloc had to define economic zones, and the experiments with cybernetic management could be transferred from the real experimental simulations to the real world.

The early 1960s was a time characterized by a fear in the Soviet bloc of centralized command economy, which in turn pressured his party colleagues to assume rational managements. I have spent some time pondering the role of design in the Soviet Bloc. In 1979 hundreds of boards and realistically looking prototypes (see illustrations) were shown in VNITI’s own exhibition hall at the Pushkin Square in Moscow, followed by a tour of exhibitions worldwide (for example in Germany, Yugoslavia, India, and Finland). After leaving the ElektroMera project to a delegation from Siemens visiting Moscow, Yuri Solodov, director of VNITI, recalls: “They were shaken: if this program was implemented and its products were to appear on the market, they said it would be a very formidable blow for them.”

With its motto “Workers of the world, unite!” the Soviet Union built a society during its almost seventy years of existence that so differed from the Western capitalist model — which was intrinsic to the definition of design in the canonical literature of the field — that the very notion of design does not apply. To date, the general interest of the young academic disciples of design history has mostly centered on consumer goods in the affluent world. Given the common discipline of design history has mostly centered on consumers, the design and the productive processes that are shaping the world, I suggest that we must look toward the design and the productive processes that are shaping the world, I suggest that we must look toward the design and the productive processes that are shaping the world, I suggest that we must look toward the...
of the designer in the productive process as a whole, rather than simply the design of forms. 31 In this article, **ElektroMera** was discussed in such a framework. Boiled down to its very basics, what these complex phenomena that connected design and cybernetics in the Soviet Union all had in common was standardization – or rather the problem of lacking implemented standardization, and although the ambitious design historian should investigate these phenomena from the hands-on oily bolts and screws to the abstraction of the entire artificial world, here we confined ourselves to a few aspects. 32 Despite good intentions, **ElektroMera** was but one more failed large-scale project in Soviet Industry. 33 It is not within my competence to explain as to why the efforts to make Soviet products of consumption more widely available were eroded by inconsistencies and corruption. Rather than their failure, my concern is to place them in relief outside the paradigm of current design history, for otherwise they would have been discarded as not actualized possibilities. 34

The Soviet military dictatorship is known as a society with little concern for the well-being of its civilian subjects. Nevertheless, as my investigations on design from the 1960s to the 1980s show, wide-ranging efforts and considerable financial resources were spent on research to change this, at least within the limits of the projects and experiments. In the attempt to make concrete consumer goods, **ElektroMera** was a reality check, with the important aspect, as I see it, that it challenged the view of whether products should be made for military display or for making the non-glamorous everyday life more livable. Whether the state concern was really for the well-being of the people, or only about putting power on display, is a judgment beyond the scope of this article. **ElektroMera** was to have integrated Lenin’s grandiose plan for electrification, Stalin’s plan for automation, and Khurshevchev’s plan for the cybernetization of the whole country. But the Soviet dream world was closer to catastrophe than to reality. The Berlin Wall fell and companies of the capitalist world such as Siemens and General Electrics could, once again, breathe freely. “Made in the USSR” was a dream which never came to be.  

**REFERENCES**

1 Mikhaiil Ludur, “Programma i soznaniia” [Program and creativity], in **Dekorativnoe iskusstvo v SSSR** [Decorative arts in the USSR], 1961:10.


3 The “scientific-research institutes” that carried out applied research by 1960 numbered 5,288. Of these, about 400 concerned themselves with engineering, and about 1,000 served as independent construction bureaus. See Raymond Hutchings, **Soviet Science, Technology, Design: Interaction and Convergence**, Oxford, 1976, pp. 28–29. Hutchings incorrectly calls the construction bureaus “design bureaus” which causes confusion insofar as their work did not include any ergonomic or aesthetic considerations whatsoever.


6 The ergonomic shortcomings at Chernobyl are discussed in Margaret Talbott, “Atoms: the Computer and the Cyberneticians,” in **Biological aspects of cybernetics** [Biologicheskie aspekty kibernetiki], Moscow 1962.

7 In the literature glavnii konstruktor, e.g. the chief engineer, is often translated as “designer” even though no consideration is given to the user of the machine.

8 L. A. Kuzmichin & D.N. Schelkunov, “Dizain programa VO ‘Soiuzelektroprobor’” [The design program for the conglomeration of all union electric instruments], **Tekhnicheskaia estetika** 1984:3.


11 Aksei I. Berg, “Kibernetika i nauchno-tekhnicheskii progress” [Cybernetics and scientific-technological progress], in A. Kuzin, ed., **Biologicheskie aspekty kibernetiki** [Biological aspects of cybernetics], Moscow 1962.


22 For example Dzhemshur M. Gvishiani, **Sotsiologiiia Biznesa: Kriticheeskii ocherk amerikanskoi teorii menedzhmenta** [Business sociology: A critical essay on American theory of management], Moscow 1962.


24 Gerovitch has edited translations on this topic with authors from the United States.


28 Aksei I. Berg, “Kibernetika i nauchno-tekhnicheskii progress” [Cybernetics and scientific-technological progress], in A. Kuzin, ed., **Biologicheskie aspekty kibernetiki** [Biological aspects of cybernetics], Moscow 1962.


30 Yuri Soloviev, Moia zhizn’ v dizayne [My life in design], Moscow 1994, p. 94.

31 For a recent discussion on the redefinition of design, though not taking into account the Eastern Bloc, see the Journal of De- sign History Special Issue: The Current State of Design History, vol. 22:4.


33 The story of standardization and logistics in the Soviet Union is to my knowledge not yet written. The history of logistics in the West is currently being studied by Monica Dommann.


**Does the aesthetic value arise in its manufacture? Or only in the rejected eye of a beholder?**