

# History of TV in Siberia

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**Abstract** — TV was invented about a century ago but it was not used by everybody immediately. The paper tells how TV was first installed in Siberia.

**Index Terms** — TV history, amateurs, first Siberian TV.

## I. INTRODUCTION

Tomsk is a city in a very heart of Siberia (Russia), half way from the Urals to the Baikal Lake. In 1878 here was founded the first in the Asian part of the Russian Empire university – now Tomsk State University. In 1896 it was followed by the first beyond the Ural technical high school – at the beginning it was called Tomsk Technological Institute. Now it is Tomsk Polytechnic University. The second one is the place where the first in Siberia TV transmitting center was built.

## II. FIRST SIBERIAN AMATEURS

It was the amateurs who stood at the beginning of communication in Siberia. One of them was a student of the Technological Institute Boris Golubkov who built the first radio station in Tomsk in 1920. Next was the teacher of the same Institute Vasili Shirokov who came to the Institute in 1921, read lectures on electrical engineering and encouraged his students to design their own transmitters for communication. Later Shirokov moved to Moscow and headed the construction of the first broadcasting station “Comintern” – the biggest at that time in Russia.

Time passed and in 1932 Moscow started experimental image broadcasting using a 30-line mechanical system with Nipkov disk.

In the 30<sup>th</sup> of the XX<sup>th</sup> century long waves were used for TV. Therefore people in Tomsk could receive signals from Moscow. And they did so.

The first group was organized at the Siberian Physical Engineering Laboratory (SPEL) of the University. The leader of the group was Vasili Denisov – the father of one of the Russian composers. On the first of November 1931 their TV station started regular experimental broadcasting at the wave 453 m – once in ten days after midnight. They showed drawings, photos and even moving pictures.

In November 1931 they also started receiving moving images from Moscow.

The magazine “Radiofront” (No.1 of the 15<sup>th</sup> of January, 1932) wrote: “Now Moscow can be seen in Tomsk, Smolensk, Leningrad, Kiev, Odessa and Nizhny Novgorod” (all cities but Tomsk are in the European part of the country).

The Second World War stopped this activity.

## III. SIBERIAN TV

Only in 1945 Moscow renewed their programs. But it was now electronic television (625 lines, 25 frames per second with line interlacing (suggested, by the way, by the mentioned above Vasili Denisov, who in 1937 published a paper “On the line interlacing in TV” and received the inventor's certificate).

In May 1951 Leningrad followed the example, then Kiev. So by 1952 there were only three broadcasting TV stations in the Soviet Union, but the situation has changed compared with the pre-war period – TV stations transmitted only ultra-short waves which did not cover long distances. Tomsk is about 3200 km from Moscow. So there was no hope to see programs from Moscow or Leningrad. At the beginning of 1952 three people from the Polytechnic Institute (former Technological Institute) – young engineers V.S. Melikhov, E.N. Silov and A.A. Bakakin – with five their students decided to build the transmitter of their own. In the middle of the year four other technicians joined the group. They all were young and brave.

At that time amateurs designed a TV station in Kharkov. So people in Tomsk decided to follow the suit. E.N. Silov and A.A. Bakakin went to Kharkov to see what was going on. They decided that they could also manage.

It took nearly a year to make the equipment and on the 25<sup>th</sup> of December of 1952 the first short program was transmitted from the top floor of one of the Polytechnic Institute buildings. The power of the transmitter was 20 W.

The program was received at the distance about 3 km. A self made receiver was used – not with kinescope (they did not have any) but with an ordinary oscilloscope tube. They transmitted a cinema documentary program – moving pictures and sound. It gave start to a new TV study centre at the Polytechnic Institute. At the beginning there were only 320 lines in a picture, but since June 1953 the number became standard – 625 lines. In 1953 they started regular broadcasting for the area – showed motion pictures with sound tracks. It was so till the 15<sup>th</sup> of April 1955.



Figure 1. The physics building of the Tomsk Polytechnic Institute where on the top floor the first TV transmitter was made (so it looks nowadays).



Figure 2. Sergey V. Melikhov – research supervisor of the groope members.

“Literature newspaper” (14.02.1953) wrote that “success of the local TV centers in Riga, Tallinn, Sverdlovsk and Tomsk (again Tomsk is the only city beyond the Ural) is the result of the creative activity of amateurs”.

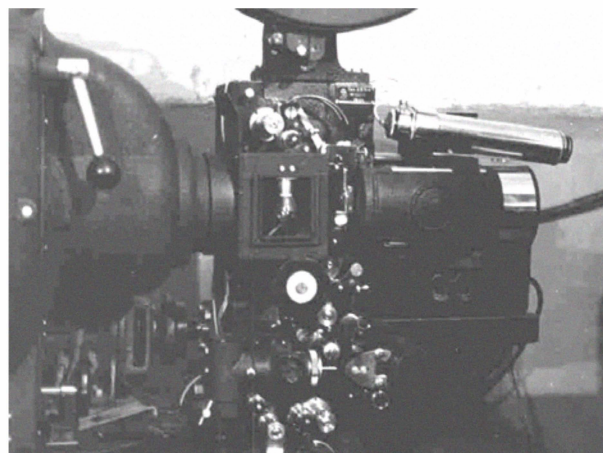


Figure 3. Transmitter used at the TV laboratory of the Polytechnic Institute in 1953.

In 1954 Tomsk celebrated its 350<sup>th</sup> anniversary. It encouraged the authority to start building the real state (not amateur) TV centre. The same group of engineers and students took part and in May 1955 Tomsk TV centre was approved by the state board. It was the first in Siberia and the fifth in Russia TV – fully electronic transmitter for regular broadcasting.



Figure 4. Four-cannel test equipment produced at the Tomsk Polytechnic Institute TV centre, year 1958.

Special building was constructed. The antenna was put on the roof of a water tower; transmitter was on the top floor of the same tower. The broadcasting was opened by showing the moving pictures “True friends”.

The program of broadcasting was published every two weeks, where there were mentioned all the programs, the time of their broadcasting and abstracts of some of them.





Figure 5. The water tower and the antenna of the first TV State Centre in Tomsk.

Till the end of 1955 TV centre broadcasted four times a week (Tuesday, Thursday, Saturday since 20 till 22 and on Sundays since 19 till 20). In May 1955 two studio cameras were brought from Moscow. The first studio program was about "Historical treasures of the Moscow Kremlin". Professor I.M. Rusgon from the State University was the speaker.

The power of the picture transmitter was 0.5 kW and the power of the sound transmitter was 0.25 kW. Once again, it was the fifth TV centre in the Soviet Union and the first one in Siberia.

*Пролетарии всех стран, соединитесь!*

## Программа передач томской студии телевидения

Октябрь 1955г.

**Суббота, 1 октября.**

20.00. Передача «В Московском Кремле». Рассказ экскурсанта профессора Томского университета И. М. Русгона.

20.40. Австрийский художественный фильм «Дел Иудан» (По мотивам одноименной оперы Мюллера).

22.00. Программа передач Томской студии телевидения на первую половину октября.

**Воскресенье, 2 октября.**

19.00. Кинопередача для детей. Художественный фильм «Борни».

20.00. Художественный фильм «Лансерина» (По пьесе П. Мирного).

**Вторник, 4 октября.**

19.00. Кинопередача для детей. Художественный мультипликационный сказка «Бестелеса и семь глазов» (По просьбе юных радиослушателей).

20.20. Выступление артистов Московской государственной оперы им. Г. Веллановой.

20.40. Художественная новелла «Пыльная» (Детям до 16 лет смотреть фильм не разрешается).

**Четверг, 6 октября.**

20.00. Иностранная кинохроника.

20.10. Короткометражный фильм «На ярмарке».

20.30. Рассказ о Томской областной сельскохозяйственной выставке.

20.40. Художественный фильм «Атлетизм оролети». (По просьбе радиослушателей).

**Суббота, 8 октября.**

20.00. Передача «Томский театр на гастролях в Новосибирске».

20.20. Музыкальный кинокомедия «Расклевывай» (По одноименной оперетте Барта Миллелера).

22.00. Концерт ансамбля Московской гос. оперы и Лауреата Всесоюзного конкурса артистов эстрады.

**Воскресенье, 9 октября.**

19.00. Кинопередача для детей. Художественный фильм «Нестерки».

20.40. Художественный фильм «Бесновидица».

**Вторник, 11 октября.**

19.00. Кинопередача для детей. Художественная повесть «Огни на реке».

20.20. Выступление артиста Государственного ордена Ленина Академического Малого театра, заслуженного артиста РСФСР И. А. Любенова. В программе: отрывок из пьесы А. Твардовского «Василий Теркин» и басни С. Михалкина.

20.35. Художественная драма «Женщина без прошлого». (Детям до 16 лет смотреть фильм не разрешается).

**Четверг, 13 октября.**

20.00. Хроникально - документальные фильмы «В центре Арктики» и «Спортивные встречи друзей».

21.40. Выступление заслуженного деятеля искусства профессора Льва Филера.

*Вос города, как люди и народы,  
Свою судьбу имеют на земле,  
по Честь и Провда, Совесть и  
Свобода,  
Живут в Москве, в её самом  
Кремле!*

1 октября в 20.00 смотрите передачу: «В Московском Кремле». Профессор Томского университета И. М. Русгон расскажет о достопримечательностях этого величественного памятника русской национальной культуры. В передачу включены киноленты «Квартиря и кабинет В. И. Ленина в Кремле».

**ЕЖЕНЕДЕЛЬНОЕ  
РАСПИСАНИЕ ПЕРЕДАЧ**  
Томской студии телевидения  
с 1 октября 1955 г.

**Вторник, 19.00—20.00.** Кинопередача для детей. 20.00—20.30. Передача студии для детей. 20.30—22.00. Новый художественный фильм.

**Четверг, 20.00—21.30.** Короткометражные и хроникально-документальные фильмы. 21.30—22.00. Передача студии.

**Суббота, 20.00—20.30.** Передача студии. 20.30—22.00. Новый художественный фильм. 22.00—22.30. Концерт.

**Воскресенье, 19.00—20.00.** Кинопередача для детей. 20.00—22.00. Художественный фильм.

На снимке: устанавливают телевизионную антенну на одном из домов рабочего поселка Морковки.

На снимке: новое здание Томской студии телевидения и телевизионного центра (Томск, ул. Красного Пожарника, 5).

Figure 6. One the first programs/timetable – October, year 1955. The new TV centre building is shown in the bottom right corner.

The equipment designed and produced by the group of amateurs worked till the 16<sup>th</sup> of the year 1966, when it was replaced by the professional station "Raion".

By the end of 1969 the new UHF 5 kW complex was installed and a special antenna tower 180 m tall was built. It allowed to enlarge the coverage from 25-30 km to 50-60 km with improved quality.

In 1956-1961 this group of enthusiasts made ten more TV centers for different cities of the USSR in the organized by them laboratory – Barnaul, Bijsk, Rubtsovsk, Ust-Kamenogorsk, Uchta, Aktubinsk, Abakan, Kustanai, Konotop, Chimkent. Cities of vast Asian part of the USSR got the opportunity to see TV programs much earlier than it would be possible without the help of the group in Tomsk. The equipment made by the amateurs worked for 10-15 years and only after that was replaced by the industrial devices.





Figure 7. The program is transmitted from the studio.

Till the year 1973 all the programs were transmitted straight from the studio because there were no tape recorders. In March 1973 the first tape recorder “Kadr-3”, production of the Novosibirsk plant of precision engineering, was delivered to Tomsk. Its size in mm 1480x1690x750, weight 550 kg and power consumption 1,8 kW. It was very difficult to work with the only one tape recorder – no dubbing of the programs was possible till the end of 1974, when the second tape recorder “Electron-2” of Leningrad production was bought.

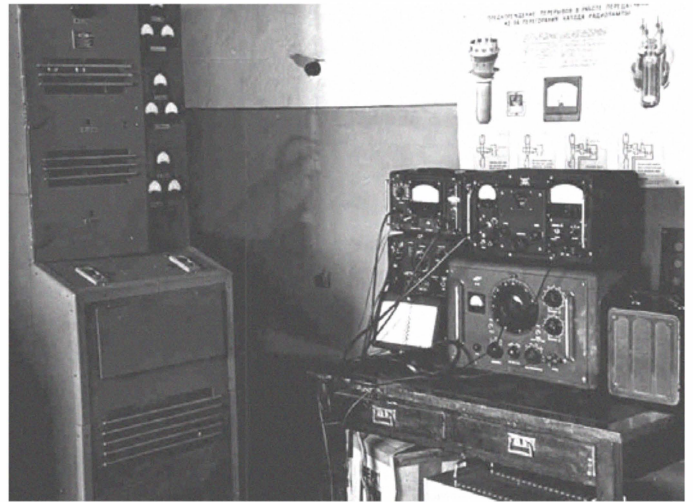


Figure 8. Equipment of the studio in Bijsk made at the laboratory of the Tomsk Polytechnic University.

#### IV. CONCLUSION

History of the Siberian TV is a brilliant illustration of the role which the amateurs played in the progress of electronics in the middle of the XX century.