VISEGRAD SCHOLARSHIP AT THE OPEN SOCIETY ARCHIVES BUDAPEST
FINAL REPORT on
"Repertories of (in)discreetness II" project.

Researcher: Dr. Tincuta Heinzel (Germany)
Other implicated persons (artists-researchers): István László and Lasse Scherffig
Related art - installations: "Signal to noise" (radio-based sound installation & visuals of technical aspects by Tincuta Heinzel and Lasse Scherffig) & "Ghost Veil" (Slide installation by István László).
Scholarship period: 12 of January - 8 March 2015

During the two months residency at OSA Archives in Budapest I and my colleagues István László and Lasse Scherffig, we were concentrating mainly in collection of the necessary materials need it in the production of our art installations „Signal to Noise" and "Ghost Veil".

„Signal to Noise" and "Ghost Veil" are two installations part of "Repertories of (in)discreetness" project I and Ioana Macrea-Toma have initiated in 2013. The project has its starting point in the archive of Radio Free Europe from the Open Society Archivum in Budapest. It questions the act and mechanisms of archiving "the Other", with a focus on the European "East". The project discusses the ways in which information was collected and transferred, the ways in which the East has gained an epistemic body through refraction.

„Signal to Noise" and "Ghost Veil" installations point out the relation between the nature and the production of knowledge, as well as its reception. The two installations make use of sound, technical reconstructions and digital manipulations as forms of artistic and historiographical research.

TINCUTA HEINZEL'S AND LASSE SCHERFFIG'S RESEARCH FOR "SIGNAL TO NOISE" INSTALLATION
During our research at OSA Archives Budapest, I and Lasse Scherffig focused on the materials which supported the realisation of „Signal to Noise" radio-based art installation.

Using two radio transmitters and a number of mobile radio receivers, the „Signal to Noise" radio-based installation will create a volatile acoustic space in which two concurring voices compete by broadcasting on the same frequency. These two voices consist of archived material of the Cold War era from (Western) Radio Free Europe and (Socialist) Radio Romania. Carrying mobile radios, listeners will move through the space in which both transmissions jam and disrupt each other and with every motion enact an ever-changing soundscape. The result is a spontaneous choreography, re-enacting the "fight over hearts and minds" between East and West. The installation is based on the recalling of the technological and ideological mechanisms used during the Cold War – when Radio Free Europe was meant to counter Socialist ideology and in turn was jammed by eastern authorities. By using DIY-methods, the project also recalls the bricolage strategies used to technically circumvent the official channels of information in Eastern Europe. The project also try to point to the fact that far from being historical and contextual dated, the fluidity of radio (or "Hertzian") space continues to be relevant today, in the age of wireless communication and coded information.

The research at OSA was meant to gather content materials for the radio-based installation, to collect information related to the technical protocols used by Radio Free Europe, but also to research over the strategies of technical extrapolation used by individuals and small groups in Eastern Europe in order to divert the official channels of information.

The collections we studied were :

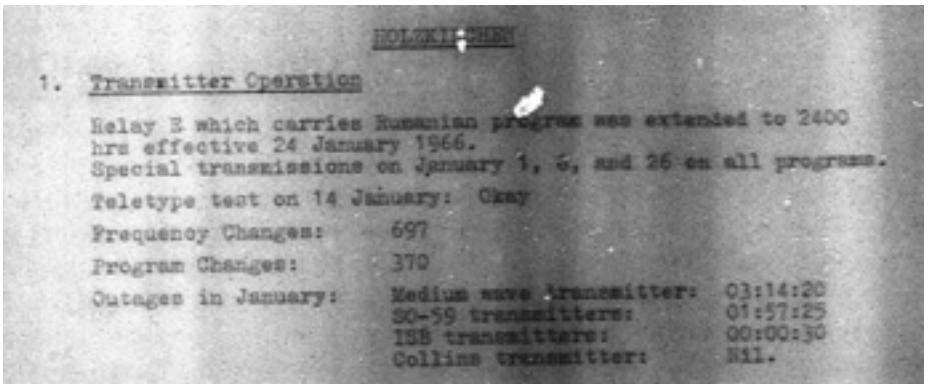
The records of Radio Free Europe/Radio Liberty Research Institute, 1949-1994 (HU OSA 300-1 General Records, 1951-1979; HU OSA 300-8 Publications Department; HU OSA 300-81 Monitoring Unit, 1979-1995; HU OSA 300-85 Samizdat Archives, 1956-1994).

The records of Hungarian Militia Films 1958-1989 (HU OSA 344 Hungarian Workers Militia Films 1958-1989).

During our research we focused on broadcasting strategies and jamming efforts used during the Clod War by the different authorities. We look closer to the literature and engineering record of Radio Free Europe.

Broadcasting dynamics:

- Broadcasting happened on various shortwave and some medium wave frequencies which were changed frequently (dynamic use of the spectrum, Fig. 1)
- At the German border, mobile broadcasting was employed (using a broadcasting station based on a number of trucks) to impede jamming (dynamic use of location)



HOLZKIRCHEN

1. Transmitter Operation

Relay 3 which carries Rumanian program was extended to 2400 hrs effective 24 January 1966.
Special transmissions on January 1, 6, and 26 on all programs.

Teletype test on 14 January: Okay

Frequency Changes: 697

Program Changes: 370

Outages in January:

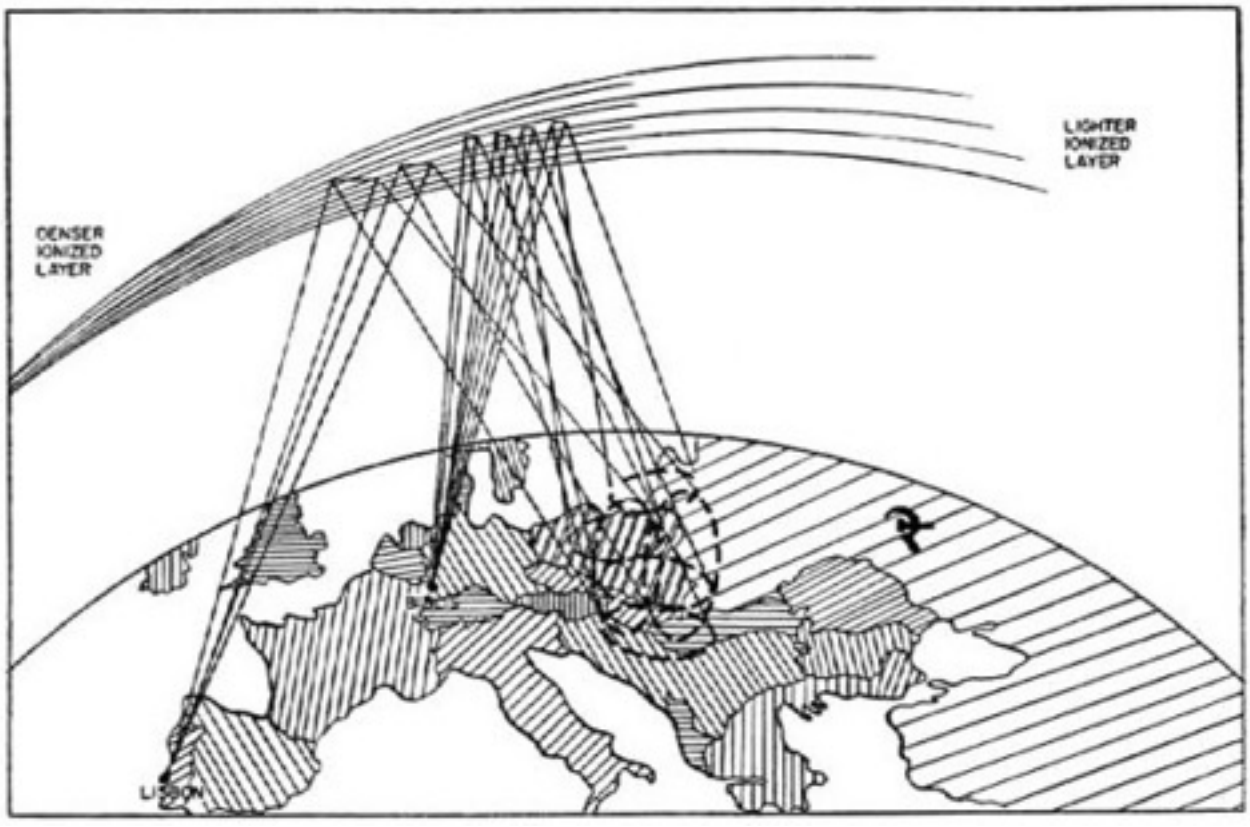
Medium wave transmitter:	03:14:20
SO-59 transmitters:	01:57:25
ISB transmitters:	00:00:30
Collins transmitter:	Nil.

Fig. 1: Frequency changes at one Holzkirchen transmitter in 1/1966

Solar wind and skywave propagation: broadcasting from Portugal.

- The solar wind creates an ionized layer at the border between earth and space known as ionosphere. This layer can both reflect and absorb short wave radio. Under favorable conditions, radio signals may bounce off this layer and reached places normally occluded by the curvature of the earth – a process named skywave propagation. These conditions depend on a) solar wind activity (which correlates with the number of sun spots) and b) the time of day.
- Despite being produced in Germany, broadcasts were transferred (by radio) west to Portugal and then sent back east towards their audiences (Fig. 2). This is because skywave propagation enabled the radio waves from Portugal to reach their targets via the ionosphere.
- Broadcasting from Portugal hindered jamming, because of the time-difference between Portugal and Eastern jamming stations: When the sun is down over the European East the ionosphere becomes less reflective for (jamming) broadcasts originating here, while broadcasts from the European West still benefit from the ionization caused by sunlight here (Fig. 3 & 4).

Fig. 2: Germany-Portugal



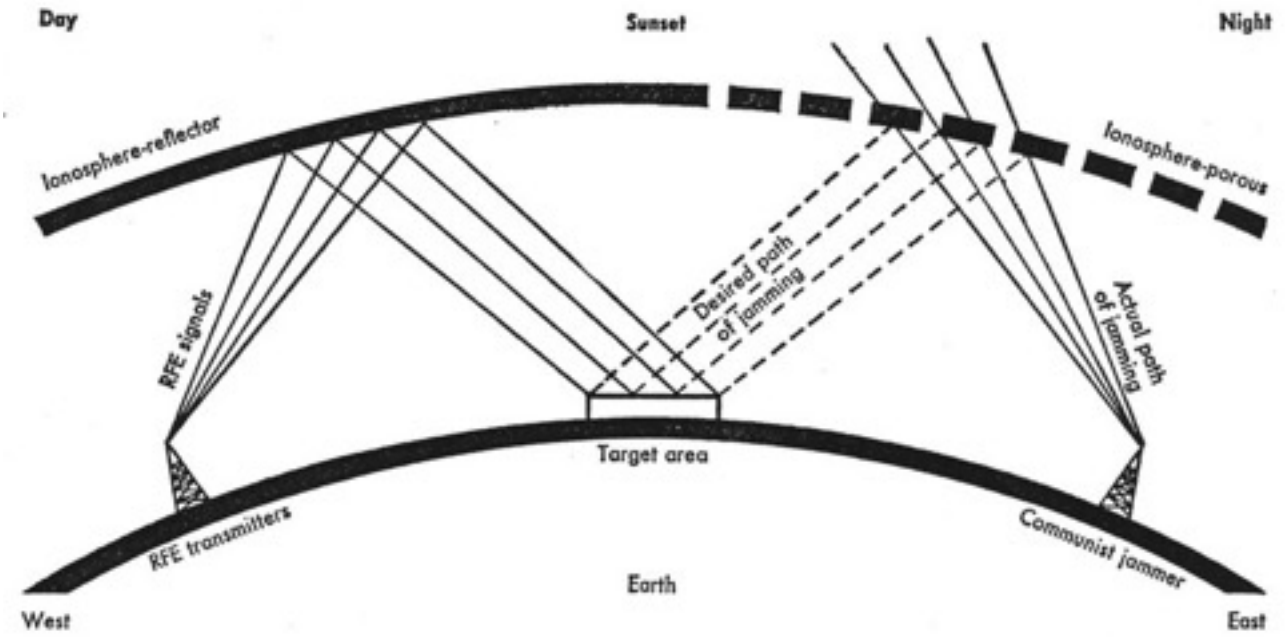
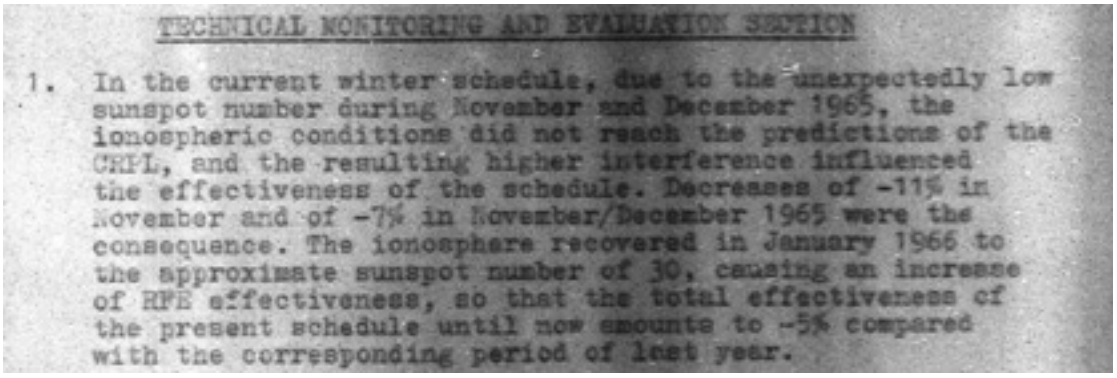


Fig. 3 & 4: Skywave propagation

Natural interference: space weather

- Because of the usage of skywave propagation, broadcasting was highly dependent on space weather (solar wind, solar storms).
- Broadcasting was thus optimized according to space weather reports and predictions and compared to intelligibility measurements of the monitoring stations (Fig. 5).


TECHNICAL MONITORING AND EVALUATION SECTION

1. In the current winter schedule, due to the unexpectedly low sunspot number during November and December 1965, the ionospheric conditions did not reach the predictions of the CRPL, and the resulting higher interference influenced the effectiveness of the schedule. Decreases of -11% in November and of -7% in November/December 1965 were the consequence. The ionosphere recovered in January 1966 to the approximate sunspot number of 30, causing an increase of RFE effectiveness, so that the total effectiveness of the present schedule until now amounts to -5% compared with the corresponding period of last year.

Fig. 5: Sunspot comparisons/monthly engineering report

Man-made interference: other broadcasters

- Usage of frequencies was coordinated with:
  - other Western broadcasters (Voice of America, etc.) and
  - nightly measurements of frequency occupation in order to minimize interference with other radio stations.

Man-made interference: jamming

- Besides using atmospheric jamming against skywave propagation, Eastern authorities used local and directional jamming techniques (Fig. 6).
- When RFE broadcasters changed locations (using the trucks), jamming stations were able to relocate within minutes or hours.

Fig. 6: Jamming

Monitoring and optimization

- Self-monitoring of RFE thus served three purposes
  - Evaluate and optimize broadcast performance against space weather
  - Evaluate and optimize broadcast performance against other radio stations
  - Evaluate and optimize broadcast performance against jamming


Fig. 7: Monitoring and plotting monitoring charts

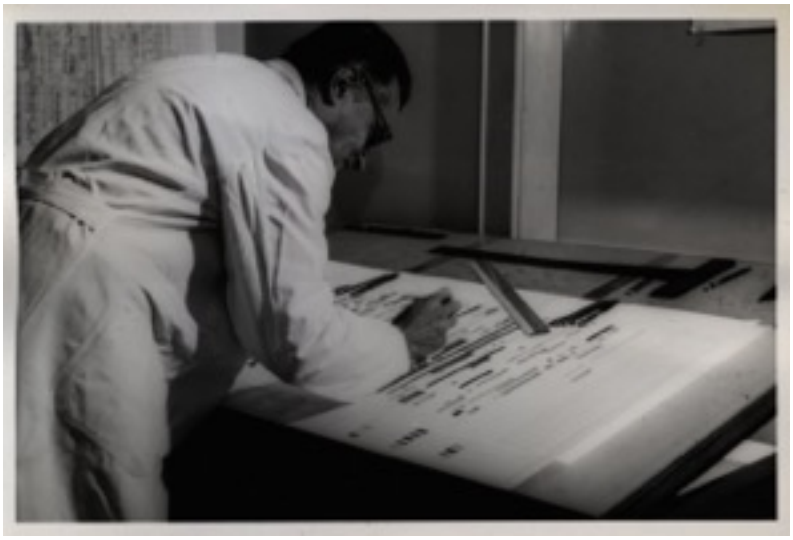


Fig. 8: Monitoring statistics

Techno-thematic interrelations

- The radio program of the RFE/RL stations was thus the result of the interplay of a number of causes. It was scheduled according to:
    - the changing position of the sun during the day (which also varies with the seasons) in order to make use of the ionization differences between East and West,
    - solar wind activity/space weather, as it correlates with sun spot activity and astronomical measurements,
    - the activity of "friendly" radio stations (e.g. Voice of America, which could be coordinated in advance),
    - the activity of various other radio sources (which were monitored),
    - and jamming efforts.
- These techno-scientific constraints interrelated with thematic ones, because radio programs were also scheduled according to political events in the European east. Broadcasting efforts could thus shift from country to country in order to, for instance, cover protests in Poland etc. To make sure certain programs definitely could be heard in their target countries, "saturation broadcasting" was employed, i.e. using a large number of frequencies and stations for one single program.

TINCUTA HEINZEL'S INDIVIDUAL RESEARCH

Apart the research for "Signal to Noise" installation, I was also interested in the subject files of Radio Free Europe related to Romania. The areas that particularly interested me were related to :

- the production and the political economy of textile industry,
- the analysis of goods consume during the communist period,
- the development of computers and their application to industry

The information gathered will be used in connection with my previous research from "Artists in Industry" archive project (www.artistsinindustry.com) related to the state of textile design in Romania during 1945-2000.

The collections I studied were :

HU OSA 300 - 2-7 Subject Files relating to Romania 1962-1979

HU OSA 300-60-1 Records of Radio Free Europe/Radio Liberty Research Institute / Romanian Unit

ISTVAN LASZLO'S RESEARCH FOR "GHOST VEIL" INSTALLATION

István László's research at OSA Budapest focused on information controlled by party media, as well as editing of historical records. This lead him to analyse, in contrast, a fragment of the images in the Fortepan collection. There his interest was in the of the uncontrolled photographical records of monuments, architecture and people. His project title 'Ghost Veil' refers to : 1. ghosting, a therm that refers to transmission interference in analogue or digital media devices and 2: Unveiling of sculptural objects.

The project reflects on the information transmission, interference, altering or blockage that was practiced in the second half of the 20th century between the East and West. The time spent at OSA Budapest, helped to put his work in context and to open new perspectives. The video and photo material as well as the conversations with staff at OSA strengthened his curiosity to dig deeper in to the archives and to analyse professional and amateur photo / documentations alike.

PRESENTATIONS OF THE RESULTS

Between 18 of March - 1st of April it is programmed to take place "Repertories of (in)discreetness" exhibition at tranzit.ro Bucharest. The exhibition will present works of Irina Botea & Jon Dean, Tincuța Heinzel & Lasse Scherffig and István László.

During the opening will also take place a round table : "The Radio Free Europe Archives – between historiographical expression and artistic research". Participants will be Irina Botea, Jon Dean, Daria Ghiu, Tincuța Heinzel, István László, Ioana Macrea-Toma, Georg Trogemann, Lasse Scherffig.

A publication related to the project it is also planned for the end of 2015.

FINAL REMARQUES

The research at OSA Archives give us the opportunity to have an overview of Radio Free Europe archives, to analyse the ways in which the information was collected, the ways this information was systematised and how it was finally used. The collected materials remain to be analyzed and will serve not only for artistic purposes, but also for academic research. The excellent exchange of ideas with Ioana Macrea-Toma continued during our research period at OSA. The stimulating research environment conducted by Istvan Rev and the friendly time spent with the OSA staff members have made our research period a very rich experience. The support provided by Katalin Gadoros, Robert Parnica, Zádori Zsuzsa, and Tamási Miklós was invaluable.