The Hungarian Ljapunov:
Dr. Tihamér NEMES (1895-1960)

He started his activity as a mechanical engineer on 1917.
Nemes Tihamér

• The not very well understood, accepted and recognised inventor
• The first engineer in Hungary,
• who tried to publish and teach
• the basic concepts of
• „cybernetics”
His engineering activity

- He was the mechanical engineer of the Lloyd aircraft factory
- He was interested and studied the electrotechnik and telecommunication
- He became the chief engineer of the „Telefon-communication News Company”.
- He is 30 years old, when he was appointed as managing director of the Electrical and Precision Engineering Inc. Co.
He is interested about the research and development.

- He interrupted his directorship carrier and he goes as a single engineer to the Development Organisation of the Hungarian Post
- His first task was: to develop new phones. He is the innovator of the famous new Hungarian phone: CB 35, which was distributed in whole Europe
- He worked out a new method about understanding the speech in the phones.
The CB 35 Phone

• In the Phone-
• museum
• One of the most
• successful
• Hungarian phone
• product (left)
The development of machines about the human activities

• He is interested about the television-technics, his first theoretical and practical research started in 1930.
• He studied the mechanism of eyesight and applied the results in his colour television-patent.
• He patented his colour television system (1951).
• Later it was realised
• The television was his first cybernetical-like modell of the human eyesight.
A Hungarian engineer on cybernetics before the cybernetics was invented.

• Norbert Wiener declared the basic concepts of the cybernetics on 1948 in his book:
  – „Cybernetics or Control and Communication in the Animal and Machine
  – (The animal means human being, too.)

• Tihamér Nemes’ goal was to copy and to realize the different human activities with mechanical and electrical machines.
His logical machines

– The working modell of the Jevons-logical piano. Only wood, nail and string
– The pocket logical machine of wood to the engineers solving logical tasks – using as the „slide-rule” to arithmetical operations
– The genetics logical machine with reveresed punch cards.
– Unfortunately all his logical machines were lost.
The copy of the Jevons’ logical piano. Internal details: wood, nail and string
The copy of the Jevons’ logical piano. The view of the piano and its keyboard.
The pocket logical machine of wood
The genetic logical machine
Reversed punch card
Electro-mechanical, cybernetical theoretical machines. Patents.

- He could not realized them
- Speech writing automat
- Reading machine
- Machine for statistical data-processing
- Learning machine
- Music–compose machine etc.

All Nemes’ models were lost
Chess

- He studied the mechanism of the human thinking – i.e. the operation of the brain.
- He was a good chess-player.
- His chess machines were only designed, but he could not construct them, because the level of the engineering-technology was poor.
- He constructed a chess machine to solve a chess exercise in two steps.
- His next construction was a chess playing machine, but it was never realized.
A design of a theoretical chess-machine to solve chess exercises in two steps.
A theoretical chess-machine to solve chess exercises in two steps. Block-chart
Computers

• Several visits in our Cybernetical Research Group from 1957, where we constructed the M-3 computer.
• It was our first connection
• He was a very good adviser
• He was interested about our activities
• He died before we can show him our M-3 computer, which was ready in 1959.
His imagination about the computer in his book
His idea about the controller of the ferrit-memory

- He studied the
- Early American
- Computers
He was an invited speaker of the Budapest University of Technology

• He was not an „ordinally” speaker
  – He gave lectures
    • to undergraduated students and
    • engineers of continuation courses
  – He was an excellent speaker
  – He gave ideas
  – His subject matter was more then the normal teaching material. He presented mostly his immaginations.
  – He wrote a lot of articles and studies, but his book was edited by his friends after his death
His posthumous Book, Edited by his friends
Cybernetical machines

- This book was edited by his friends from the Studies of Tihamér Nemes, the No 1 Cybernetical Scientist in Hungary.