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# GRADUATE OF RIGA POLYTECHNIC INSTITUTE, ENGINEER, INVENTOR AND ATHLETE ARNO LĪCIS

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**Summary**. The article summarizes the career of a graduate of the Faculty of Mechanics (1964) of Riga Polytechnic Institute *Arno Līcis*. The article reveals and describes his work while being an engineer at the Riga Electromachine Building Factory (*RER*), at the Latvian Scientific Research Institute of Traumatology and Orthopaedics (LSRITO) and in the printing house *«Jāṇa sēta»*, as well as being an inventor. It has been discovered that he had promoted orienteering sports and had significant achievements in competitions of various scale, including mass competition named *«Magnēts»* managed by him, which had been taking place since 1969. This is the first research on the life and professional activities of engineer *A. Līcis*, which is dedicated to his 80th birthday to be celebrated in July 2019. Data from the personal archive of *A. Līcis*, documents of the Latvian State Historical Archives and the collection of the National Library of Latvia are collected in this article.

**Keywords:** Arno Līcis, graduates of RPI, orienteering sports, «Magnēts».

## Contribution of *A. Līcis* to Orienteering Sports Through Mass Competition «*Magnēts*»

The number of graduates of RPI amounts to many thousands and each of them has given his contribution and left some evidence behind for the future generations. Graduate of the Faculty of Mechanics of RPI *Arno Līcis* is one of those whose name is inextricably linked to the life and events of RPI and the Republic of Latvia in the 20th and 21st centuries.

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The authors of the article studied the areas of the life of graduate *A. Līcis* where his contribution has been significant and will remain in future.

A. Līcis is a well-known orienteerist in Latvia and plays an important role in the creation and organization of orienteering competition «Magnēts». In 2019, «Magnēts» is celebrating its 50th anniversary. Already during his studies in 1963, A. Līcis became a board member of the Latvian Orienteering (at the beginning – tourist) Federation. His name is on the list until 1973. From 1963 to 1983, A. Līcis also headed the orienteering sports section of the Sports Association «Daugava».



**Figure 1.** *A. Līcis* at the beginning of the 1960s [1].



Figure 2. Honorary Award of the Central Council of the Union of Sports Associations and Organizations of the Union of Soviet Socialist Republics (USSR) to *A. Līcis* (1967) [2].

The rank of Master of Sports in Latvian Orienteering Sport were introduced in 1966. *A. Līcis* became a master of sports of the USSR in orienteering in 1967 and his future wife *Ieviņa Līce* – a year later, in 1968.

In the autumn of 1968, *A. Līcis* with a USSR Tourist Group left for Sweden to observe the World Orienteering Championship. There were four people in the group from Latvia. The USSR was not yet a member of the International Federation therefore the group did not start at the official start, but took part in the races of World Championship.

The Latvian Orienteering Federation instructed *A. Līcis* to create a form of competition for working people and athletes in the evenings of working days, which would be suitable for different age grups of different mastery level. After summing up everything that has already been created in the world, as well as learning from the mass participation of the Swedish orienteerists, *A. Līcis* proposed and organized the orienteering competition «*Magnēts-69*» [3], which was scheduled for 10 Wednesday evenings from 4.00 p.m. to 7.00 p.m. Participants could choose a distance appropriate for their skills and age. *Rodrigo Slaviņš*, the first

President of the Latvian Orienteering Federation, in the autumn of 1969, gathered representatives from all Latvian tourist clubs and *A. Līcis* introduced them to the results of the first year of *«Magnēts»* and made suggestions on how to improve the process of such competitions. In the competitions before *«Magnēts»*, about hundred men and hundred women took part, later – after introducing *«Magnēts»* – it turned into the first Latvian mass orienteering competition.

In the following years, similar competitions took place in about 20 centres. In 1980, on one of the Wednesdays of «Magnēts» in Riga, the number of participants reached even 2400. In 1987, there were even 2484 participants [4]. Representatives of the International Orienteering Federation came to Latvia to get acquainted with the achievements and expressed their appreciation admitting that there has not been such mass participation in orienteering competitions on work day evenings as in Latvia. The world's leading athletes from Scandinavia had also come and rejoiced the achievements of Latvian orienteerists.

#### Childhood and Youth of A. Līcis

A. Līcis was born in Liepāja city on 16 July 1939. His mother – Frīda Lizete Līce (born Karlsone; 1910–1997) [5] – had a daughter, Valda Bredaus (1929–2015), from her first marriage, who was ten years older than Arno. The head of the family – father Voldemārs Gustavs Līcis (1898–1985) – was a locksmith, a driver of the locomotive, but in his spare time he practised sport. In 1930, he set a record on the trek of Sports Association «Marss» (15 minutes and 5.9 seconds) in the 15 km ride that remained unrivalled in the USSR until 1975. Trekking cyclist V. G. Līcis participated in competitions in the 1930s [6] and wanted to attend the Summer Olympics in Berlin in 1936, but he had no money for it.



**Figure** 3. In the second row from left: parents of *A. Līcis – Frīda Lizete* and *Voldemārs Gustavs Līcis* (the late 1930s) [7].

The first years of *Arno's* childhood took place in *Jaunliepāja* city. At the age of two, he became ill with asthma in severe form and struggled with the disease until 1954 with varying degrees of success. Because of the disease, he had to study in the 3rd grade for two years. There was no medicine for the disease, therefore folk medicine was used. In 1944, Arno also had diphtheritis. Doctors advised that the family change the place of residence, thus the family moved to *«Paisas»* (name of the house) at *Pērkone* parish in *Liepāja* district and lived there during World War II. A. Līcis remembers that he, his sister and mother had done all the farm work for the landlord, but «the most striking impression from the period in «Paisas» has been the one of autumn cereal threshing, when a steam locomotive with a threshing machine went from house to house and our cereal was threshed for two days and in the end all the workers were treated to rich food: the landlord slaughtered a pig, sheep and chicken and brewed beer; and after the evening supper, all workers - about 20 people - sang and danced»[8].

After the war, the family moved to live with their relative and *Arno* began to learn in 1st grade of *Cenkone* Four-year School. When he had to change his place of residence again, he studied at the *Skatre* Seven-year School where, when from the 5th to 7th grade, during physical classes, he became acquainted with sports activities and «was carried away» by football. *Arno's* father gave him a football and *Arno* and his schoolmates played for 2–3 hours in a real football field until the head of the school took them home.

At home, *Arno* had to take on various responsibilities, help the family to keep the livestock and work in the backyard. Thanks to physical activity, asthma was defeated. He often went to school on a bicycle and in winter he skied to school as the distance to school was three kilometres [8].

### Studies at the Riga Industrial Polytechnicum

A. Līcis decided to continue his studies at the Riga Industrial Polytechnicum (at present – Riga State Technical School); applied for studies and passed seven entrance examinations in the Faculty of Mechanics. Four groups were enrolled at that time; there were 32 boys in his group. Arno graduated from primary school as an excellent graduate, especially in mathematics and geography, but in the first year of his studies he, in his own words, he merely managed to get through, as in the first session he got low marks (mark «three») in several subjects.

There was a healthy and sporty atmosphere among the students of the Riga Industrial Polytechnicum. In the 1st year of studies, *A. Līcis* was

the winner of autumn cross running. He was elected organizer of the activities of group's physical culture. The group decided to take part in all sports and all disciplines and four years in a row won the spartakiad of the industrial polytechnicum [8].

*A. Līcis* gradually got used to studies at the Industrial Polytechnicum and life in Riga. Already in the 4th year of studies he was close to being an excellent student. In 1958, after graduation his group was granted a month-long rest camp at the *Zvārte* Rock. Five young people from Estonia and five from Lithuania participated in the camp.

While studying at the Industrial Polytechnicum, *A. Līcis* besides athletics played also ball games and in the last year he even participated in trainings of the selected team in track and field athletics, volleyball and basketball, as well as took part in the dance group of factory «*Rīgas audums*». In 1958, *A. Līcis* graduated from the Riga Industrial Polytechnicum, obtaining a profession of technician-mechanic (operation and repair of work machines) [8].

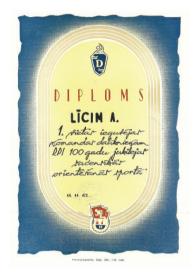
#### Studies of A. Līcis at Riga Polytechnic Institute

A. Līcis begun to work at the Workshop No. 14 of the State Electrotechnical Factory (VEF), which was located in Ganību danbis and produced mobile telephone exchange equipment for the army. Initially, he worked as a locksmith in manufacturing of apparatus, after a year he moved to a newly established group of locksmiths who repaired metal working machines of factory «Komutators». A. Līcis became a VEF champion in volleyball and football. Due to the back injury during a handball game his recruitment in the Soviet army was postponed for a year. Then the idea of studying at the university was born.

A. Līcis left VEF and on 13 May 1960 began to work as a laboratory technician at the Materials Resistance Laboratory of the Faculty of Mechanics of RPI [9]. The then Director of RPI Kristaps Neilands (1899–1960) called Arno for a meeting. The Director told about himself and asked: «What are your hobbies? Do you drink? Do you smoke?» A. Līcis replied: «Sport! But when in a company – I am not a total abstainer» [8].

A. Līcis enrolled in the evening department of the Faculty of Mechanics of RPI and worked as a lab assistant; he made various laboratory equipment for metal processing machines and participated in preparation of laboratory works for RPI day- and evening department students. The laboratory was located in the basement of the building at 1 Ļeņina (at present – Kaļķu) iela. As an employee of RPI, A.Līcis took part in volleyball trainings and sometimes played with the Dean of the Faculty of Mechanics, Assistant Professor Varaidots Zars. When a place of study

was vacated in the day department, Assistant Professor *V. Zars* helped *Arno* move from the evening- to the day department; but there were only studies without practice in the factory. He took the first exam session later, as he had missed many tests and laboratory works and managed to pass satisfactorily. In the spring of 1961, *A. Līcis* was elected person responsible for sports activities in the Faculty of Mechanics [10]. In compulsory physical training he attended athletics with *Kārlis Liepiņš* (1913–?). But already on 26 March 1961, he participated in friendly competition in orienteering sport between RPI and SUL¹ in *Langstiņi* village. He was the 12th in a competition of 80 men. It was an unbelievable result for the first competition and he was «hooked». *Arno* joined the RPI orienteering group led by *Juris Jansons* from the Faculty of Civil Engineering [11].



**Figure 4.** The Diploma of *A. Līcis* for the 1st place of orientation in team at the Orienteering Event dedicated to 100th Anniversary of RPI. 11 November 1962 [12].

The atmosphere in the orienteering environment was very friendly. Joint trainings were attended intensively and attempts were made to participate in all possible competitions in orienteering discipline. *Arno* experienced the 100th anniversary of RPI – on 11 November 1962, he participated in the competitions dedicated to it [13]. RPI orienteerists were well-known in Latvia for many years, winning awarded places in the Latvian National Team. During studies, *A. Līcis* won a silver medal at the 1st All-Union Competition in Uzhgorod [14]. *Arno's* study mates *Helmuts Guļevskis, Rodrigo Slaviņš, Imants Pelns, Māris Bļodons, Aivars Teikmanis* and others were also active in orienteering.

Only successful students could participate in national teams, *A. Līcis* was among them. He graduated from the Faculty of Mechanics of RPI on 26 December 1964, obtaining the qualification of an engineer-mechanic in the specialty «Welding Technology and Equipment» [16].

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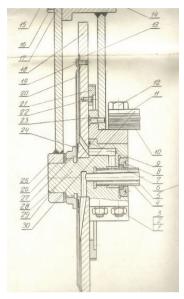
Figure 5. RPI orienteering team in 1962. A. Līcis - in the middle of the first row [15].

At that time, all day department students were subjected to an obligatory assignment of young professionals of All-Union. The best graduates could choose the best. *Arno* was second in terms of success and he chose to work at the Riga Electromachine Building Factory (*RER*), where he had already worked for five months in pre-graduate practice.

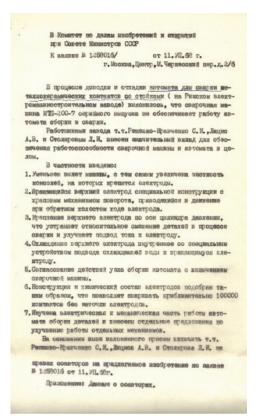
# Work of *A. Līcis* at Riga Electromachine Building Factory (*RER*)

When choosing a job at *RER*, *A. Līcis* hoped to learn and use the new possibilities of welding. In 1968, he was promoted to senior engineer. The factory had about 8000 employees at that time. *A. Līcis* implemented inventions and did other works with people of different nationalities who worked very honestly. The number of welders was also high [17]. The factory management appointed him a lecturer of courses for improving the qualification of welders of electric-contacts.

Many processes in the factory were automated but did not always work as intended. And A. Līcis had a new idea of creating a special facility that would improve the production process. Together with colleagues in the welding laboratory a prototype was first made and the joint effort was successful [8]. In 1970, «top rotary disk electrode point contact welding machine» invented by A. Līcis and his colleagues operated at *RER*.



**Figure 6.** Drawing of invention by *A. Līcis* [18].



**Figure 7.** Supplement of the Application to the Committee of Inventions and Discoveries of the Council of Ministers of the USSR (1971) [19].

*A. Līcis* failed to obtain the authorship certificate for various reasons. He was not able to advance his career without joining the Communist Party of the Soviet Union (CPSU), but he did not want to compromise, did not join the party and did not give away his inventions to others.

Engineer *A. Līcis* was sent on a number of business trips with the aim to buy separate contact-machine nodes for *RER*, such as transformers, etc. and parts. Once there was a special delegation from the USSR Ministry of Electrotechnical Industry which assessed the work done by *A. Līcis* and his colleagues: the number of contact welds (productivity, precision and connection strength) was exceeded several times. Back then, *RER* was supplied by other ministries and factories with contactors produced in Latvia.

While working as an engineer at *RER*, *Arno* trained a team of men and women in orienteering sport and skiing. Participants of the section of

orienteering sport of factory helped to organize an open competition of the republic – «Solo». The first one took place in 1972 at Lake *Usma*, with 800 participants. *Arno* and his future wife *Ievi*ņa ran competition «Solo» for eight years. In 1975, *A. Līcis* left *RER*.

# Work of *A. Līcis* at the Latvian Institute of Traumatology and Orthopaedics (LSRITO)

Unable to see growth opportunities at *RER*, *A. Līcis* changed his life drastically in 1975 – he joined LSRITO as a medical equipment engineer, where he worked for 20 years.

In 1990, *A. Līcis* helped organizing the World Conference of Latvian Doctors (WLD), which took place in Riga and was responsible for sports activities in six sports. The main organizers and authors of the WLD conference were Professor *Viktors Kalnbērzs* (Director of LSRITO) and *Kristaps Keggi* (USA) – both of them world-renowned traumatologists orthopaedists.



**Figure 8**. Celebration of the 50th anniversary of *A. Līcis* (second from right) with Professor *Viktors Kalnbērzs* (first from right) and LSRITO colleagues (1989) [20].

LSRITO was the only medical institution with its photo-cinema laboratory, which documented all complex operations, therefore all All-Union and International Traumatology Conferences were held in Riga, at the LSRITO Clinic. *A. Līcis* as an engineer and technician had to take an active part in transmitting operations' broadcasts from the operating room without interruption to the Assembly Hall, where conference participants were able to observe the progress of operations at close on the screen.

While working in LSRITO, *A. Līcis* became involved in the first orienteering sports club «*Kapa*» founded in 1987 in *Carnikava* village. *A. Līcis* was elected a board member of the club and participated in many sports events of it. He was the chief judge of the run «*Daugava–Gauja*» organized by the club for ten years (1987–1996) [8].

During his 20 years of work, A. Līcis expanded the activity of LSRITO in the field of medical sports after he was elected a member of Trade Union Committee of institute responsible for the organization of active recreation. Simple sports equipment (skis, sports suits, hockey sticks, etc.) was purchased for the money allocated by the Trade Union of LSRITO. The Institute's doctors played basketball in the TTT Hall. During a friendly hockey match with the doctors from Hospital «Gailezers» in the Sport's Palace, Professor of LSRITO V. Kalnbērzs was the goal-keeper. The hall was full of supporters. In 1990, a hockey team of Canadian doctors arrived on a sports trip to the USSR; they played with a soft outfit, avoiding the open force game to avoid injury. When in Riga, playing with our doctors, the Canadians were warmly welcomed: after the hockey game there was a dinner with music and singing. The guests were so excited that they invited their Riga colleagues – doctors – to visit Canada next year and participate in the Toronto Doctors' Hockey Tournament. A. Līcis (the only doctor without qualification) participated in this event in 1991, playing hockey for 12 days in 14 different cities in the provinces of Ontario [21]. LSRITO doctors were also at Niagara.



**Figure 9**. *A. Līcis* (first from right in the second row) in LSRITO doctor's hockey team in Canada (1991) [22].

From 1985 until 1995, about 30 medical staff (including heads of departments) took part in orienteering competition «*Magnēts*»; a 60 kilometres skiing marathon in Tartu, Tartu cycling marathon of 120 km and many other long skiing distances in Latvia, such as *Cēsis–Līgatne*, Marathon of *Jauja*, etc. When telling the doctors about orienteering competition «*Magnēts*», *A. Līcis* often said that no special equipment is needed, except a compass and a map and the only rule is that you should not run when participating for the first time, the distance should be done carefully, observing nature in the map to better understand the essence of orientation.

After the declaration of independence of Latvia in 1990, the LSRITO sports activities decreased. LSRITO began building a new treatment facility with many operating rooms. *A. Līcis* travelled abroad and met with his foreign counterparts in an effort to set up better equipped operating rooms that are more sterile and comfortable. LSRITO was reorganized into the Hospital of Traumatology and Orthopaedics and engineer *A. Līcis* [23] was appointed Deputy for Economic Affairs of Director of Hospital *Valdis Zatlers. A. Līcis* was the technical supervisor of the construction, installation and purchase of equipment and putting into service of the new hospital building. *A. Līcis* worked in this position for a year and a half when again a new turn in his life came.

In August 1995, the owners of the printing house *«Jāṇa sēta»* talked *A. Līcis* into changing his work in medicine for work in printing inviting him to become director of *«Rota-1»* and *«Rota-3»*. After a long period of consideration and discussions in the family, he decided to take this daring step – to plunge into an unknown and alien field. Immediately in the first month of work (in October), he was tasked with arranging the production of strict records on paper with watermark protection.

In 1996, printing house *«Rota-1»* was moved to *Brīvības iela* and joined printing house *«Rota-3»*, who printed and drew books. For various reasons, it was necessary to look for other rooms and the choice fell on *Silakrogs*.

*A. Līcis* retired after nine years of working in the field of printing.

### Practical Works and Family of A. Līcis

In 1968, *Arno* met and became friends with a girl named *leviņa*. She helped to organize orienteering competition «*Magnēts*». And they ran this competition for 10 years: *Arno* – Chief Referee and *leviņa* – Chief Secretary.

In 1972, they founded a family. In 1974, their daughter *Lienīte* was born. Eight years later, in 1982, their second daughter, *Līga* was born,

but in 2003 – their granddaughter  $Hel\bar{e}na$ . Along with all the work with the help of  $Ievi\bar{n}a$ 's parents, a family house was built and after the wedding the young couple could settle in one of its rooms. Arno and  $Ievi\bar{n}a$  had intense trainings as they were participants in Latvian orienteering sport. In addition,  $Ievi\bar{n}a$  and Arno have been the wedding hosts in seven weddings.



**Figure 10.** *A. Līcis* with his wife *leviņa* and daughters (in the 1980s) [24].

*A. Līcis*' spouse *Ieviņa* got infected with the Lyme disease in 1995 after an infected tick bite. *Arno* was with her for 12 years of illnesses and in 1999, together with a group of friends, even brought her to the top of Mont Blanc.



**Figure 11.** *Arno* and *Ieviņa* – first from left, *R. Slaviņš* – second from right, *H. Guļevskis* (1937–2019) – first from right during a break in orienteering competitions in Switzerland (1999) [25].

Later, after *leviņa* went passed away in 2007, his sister *Valda* moved in with him and he took care of her until the end of her life in 2015. It was not easy, but it had to be done.



**Figure 12.** From left: *A. Līcis* with RPI lecturer *Ainis Kārkliņš* and Director of RTU Administrative Department *Jans Šlihte* on RTU History Day on 10 October 2018 [26].

A. Līcis' days of the deserved rest are as busy as those in his working years: games of sport's veterans, gardening, home improvement, book reading, beekeeping, horticulture (everything in the greenhouse grows what is needed), fruit growing.

#### Conclusions

There are more than tens of RPI students and graduates who have worked in Latvia and have given invaluable and lasting contribution. Among them is *Arno Līcis* – graduate of RPI, engineer, inventor, orienteering athlete, organizer of sports life, initiator of mass competition «*Magnēts*», father, husband, gardener, beekeeper, wedding host, nominee of «*Latvijas Lepnums*» («Latvian Pride»). He was born in an independent state of Latvia and he always expressed a clear position and his conviction. Meanwhile, his intellectual, organizational and communication abilities and competencies were so excellent that in Soviet times, his colleagues, leaders and civil servants appreciated it and offered to try atypical things in his career [8]. His professional activities and sports achievements, human quality and optimism made an invaluable contribution to Latvia – in 2019, his orienteering competition «*Magnēts*» took place for the 51st time.

In 2006, for his devoted and successful work for the benefit of the Latvian State and the nation, *A. Līcis* was awarded the Certificate of Recognition of the Cabinet of Ministers [27]. Riga Technical University, the successor of RPI tradition and work, can be proud of such graduates.

#### CONFLICT OF INTEREST

The authors of the scientific article acknowledge a conflict of interest related to the joint professional work of the authors and members of the Editorial Board. The inclusion of this article in the issue was decided by those members of the Editorial Board who are not the authors of this article.

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### Rīgas Politehniskā institūta absolvents, inženieris, izgudrotājs un sportists Arno Līcis

Rakstā apkopots Rīgas Politehniskā institūta (RPI) Mehānikas fakultātes 1964. gada absolventa Arno Līča veikums inženiera profesijā Rīgas elektromašīnbūves rūpnīcā (RER), Latvijas Traumatoloģijas un ortopēdijas zinātniskās pētniecības institūtā (LTOZPI) un tipogrāfijā «Jāņa sēta», kā arī raksturota viņa izgudrotājdarbība, atklāti nopelni orientēšanās sporta popularizēšanā un sasniegumi dažāda mēroga sacensībās, tostarp viņa izveidotajās masu sacensībās «Magnēts», kas notiek kopš 1969. gada. Šis ir pirmais pētījums par inženiera A. Līča darbību un dzīvi, kas tapis, sagaidot viņa 80. dzimšanas dienu 2019. gada jūlijā. Tajā izmantots A. Līča personīgais arhīvs, Latvijas Valsts arhīva dokumenti un Latvijas Nacionālās bibliotēkas krājums.

Atslēgas vārdi: Arno Līcis, RPI absolventi, orientēšanās sports, «Magnēts».

Эрика Ланка, Алида Зигмунде

### Выпускник Рижского политехнического института, инженер, изобретатель и спортсмен Арно Лицис

В статье обобщен вклад выпускника Механического факультета Рижского политехнического института (РПИ) 1964 года Арно Лициса в профессию инженера на Рижском электромашиностроительном заводе (РЭЗ), в Латвийском институте травматологии и ортопедии (ЛИТО), типографии «Jāṇa sēta», а также охарактеризована его изобретательская деятельность, выявлены заслуги в популяризации спортивного ориентирования и достижения в различного рода соревнованиях, в том числе в организованных им массовых соревнованиях «Magnēts», которые проводятся с 1969 года. Это первое исследование деятельности и жизни инженера А. Лициса, которое проводится в преддверии его 80-летия в июле 2019 года. В нем использован личный архив А. Лициса, документы Государственного архива Латвии и собрание Латвийской Национальной библиотеки.

**Ключевые слова:** Арно Лицис, выпускники РПИ, спортивное ориентирование, «*Magnēts*».