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Chapter 17

THIRTY YEARS OF THE POLISH ASTRONAUTICAL SOCIETY*

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The first official meeting of the Polish Astronautical Society—initiated by two young scientists, M. Subotowicz, M. Sc. from the Lublin University and O. Wołczek, M. Sc. Eng. from the Institute of Physics in Warsaw—took place on the 28th of February 1955 in Warsaw. Dr. K. Zarankiewicz was elected as the first President of the Polish Astronautical Society (PAS) and served for two years. The next Presidents of the PAS were as follows: Prof. Z. Paczkowski (seven years), Prof. Dr. M. Łune (seven years), Prof. Dr. J. Walawski (two years), Prof. Dr. Barański (nine years). The current President of the PAS is Col. Pilot M. Hermaszewski, the first Polish astronaut.

The PAS is a member of the International Astronautical Federation (IAF). Several Polish scientists have served as Vice Presidents of the IAF: Prof. Dr. Zarankiewicz (1958 and 1959); Prof. Dr. M. Łune (1962 to 1965); Dr. W. Fiszdon (1979); Prof. Dr. J. Rychlewski (1982). Prof. Dr. W. Fiszdon and Dr. Eng. O. Wołczek were elected as members of the International Program Committee for successive IAF Congresses. Prof. Dr. M. Łune, Dr. Eng. O. Wołczek, Prof. Dr. S. Barański and Dr. J. Zieliński have served as Chairmen or Co-Chairmen of IAF Congress sessions and symposia.

The following scientists have served as the members of the scientific committees of the IAF: Prof. Dr. M. Łune—the Committee for Space Physics; Dr. Eng. O. Wołczek—Scientific Investigations and Programs in Space; Prof. Dr. S. Barański—Bioastronautics; Prof. Dr. M. Subotowicz—CETI/SETI and the History of Astronautics; Dr. J. Zieliński—Application of the Earth Satellites, Navigation, Positioning and Guidance; and M. Sc. Eng. W. Geisler—History of Astronautics and the Subcommittee SYRE of the IAF Education Committee.

These members of the PAS and others, including, Dr. O. Wołczek and Prof. Dr. Subotowicz, have lectured many times at the IAF Congresses. The XV Congress took place in Warsaw on September 7-12, 1964 in the Palace of Culture and Science. There were more than 400 participants, representing 49 institutions and national Astronautical Societies from 32 nations. During the opening ceremony,

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Prof. Dr. Łune read a message from the Vice President of the Polish government, E. Szyr, the Chairman of the Committee for Science and Technology. Prof. Dr. Groszkowski, the President of the Polish Academy of Science spoke on behalf of the Honorary Committee of the XV IAF Congress in Warsaw. The Plenary Session of the IAF met on September 8. The participants of the Congress were welcomed by the Vice President of the Polish government, and the General Assembly of the International Institute of Space Law (IISL) met on September 9, 1964. On September 10, the Assembly of the Administration of the International Academy of Astronautics (IAA) met, followed on September 11 by the General Assembly of the IAF. The following Polish scientists for the PAS were members of the International Academy of Astronautics: Prof. Dr. H. Łune, Prof. Dr. W. Fiszdon, Prof. Z. Paczkowski, Prof. Dr. J. Walawski, Prof. Dr. Barański, Prof. Dr. M. Subotowicz and Dr. O. Wołczek.

Prof. Dr. N. Lachs was a founding member of the International Institute of Space Law (IISL). Dr. J. Sztucki was also a member of the Board of Directors of this institute for many years. Both men served many times as Chairmen of the sessions of the IISL colloquia of Space Law during the IAF Congresses. During the XV Congress in Warsaw, one session of the Colloquium of Space Law was led by Prof. Dr. Berezowski from Poland.

The Polish Astronautical Society promotes: the self education of the members; developing and promoting their own investigations; initiating scientific studies in other Polish institutes, universities and high schools; and the popularization of astronautics and its achievements in the Polish community, especially among young people.

The Institute for Basic Problems of Technology under the Polish Academy of Science was created in 1956 to promote self education of its members. Prof. Dr. Zarankiewicz was the first director of this seven member commission. This group met every other week, at which time one of the following lectures was delivered: Prof. Z. Pączkowski on ballistics of rockets in the atmosphere; Prof. Dr. L. Teisseyre on the analysis of the work of rocket engines; Dr. M. Bielicki on the orbits of the Artificial Satellites of the Earth and Interplanetary probes; Dr. M. Subotowicz on the optimizing multi-step rockets, ion propulsion, magneto-hydrodynamic propulsion and relativistic rockets; Dr. J. Niemirowski on the effect of zero gravity on living organisms; M. Sc. Eng. W. Geisler on the programs concerning artificial Earth satellites; and Dr. O. Wołczek and M. Sc. Eng. J. Thor investigated nuclear propulsion, various rayonnement in space and instrumentation of space rockets and Moon probes. Scientists such as Dr. J. Gadomski, M. Sc. Eng. J. Walczewski, A. Marks, W. Markowski, K. Machowski, A. Januszajtis and other members of the PAS gave lectures until 1959 to educate the members of the PAS. This group later was merged with the IBPT (P. Ac. Sc.), however, this working group's operation continued unofficially until 1962 at the technical high school in Warsaw and in the Palace of Culture and Science under the leadership of Prof. Dr. Łune and Prof. Dr. Fiszdon.

In the first years after the creation of the PAS, Prof. Dr. J. Gadomski from the Astronomical Observatory at the University of Warsaw calculated the theoretical

location of possible ecospheres (zones of life) around various stars with regard to temperatures of stars and other physical conditions. Gadomski's papers presented at the IAF Congress were very interesting for the participants and induced long discussions. Other PAS astronomers directed systematical observations and registration of artificial satellites of Earth (Dr. K. Kordylewski at Kraków, Prof. Dr. J. Salabun and Dr. M. Pańtow at the Silesian Planetarium at Katowice-Chorzów, Prof. Dr. Bielicki in Warsaw). M. Sc. Eng. J. Kibiński at Kraków regularly communicated with the satellite "Tiros" and obtained, in cooperation with the Polish Hydrological and Meteorological Institute at Kraków, very good synoptical maps of the weather in Poland, which are used to this day.

Another group of young enthusiasts of rocketry in the PAS, led by M. Sc. Eng. J. Walczewski at Kraków, began designing small solid propellant rockets in 1957. They soon began more ambitious construction projects in cooperation with the Academy of Coal Mining and Steel industry. Prof. Dr. Kochmanski from the Institute for Aeronautics in Warsaw, Dr. Eng. Brodzki and M. Sc. Eng. Grzegorzewki constructed a series of big rockets, "Meteor," which were launched biannually over the Baltic Sea to a height of 80 km for upper air sounding and meteorological investigations.

In later years Dr. Eng. Z Krawczyk and Dr. Eng. J. Kazimierski from the Institute for Aeronautics in Warsaw successfully constructed instrumentation for satellites, with Soviet assistance, in preparation of the equipment for the Earth satellite "Copernicus 500."

Prof. Dr. J. Mergentaler, and the famous Kraków astronomer's son, Dr. Z. Kordylewski working at Wroclaw designed and constructed the instruments for measuring and investigating ultraviolet radiation and the x-rays coming from the Sun.

Later, Dr. Z. Kordylewski installed these instruments at a launch site in the U.S.S.R. in the rocket "Vertical." From 1970 until 1984 such Polish instrumentation was sent six times in rockets "Vertical" to a great altitude with very good results.

Polish physicians and medical specialists made great contributions to the development of space medicine and bioastronautics. In the first years after the creation of the PAS, a few Polish physicians at Kraków, namely Dr. Bilski, Dr. Ogiński and others led by Prof. Dr. Kaulbersz experimented in this sphere. Dr. J. Walawski for the Warsaw University managed investigations of men and animals submerged in water. In 1962, Prof. Dr. S. Barański and other specialists from the Military Aeronautical Institute in Warsaw with Dr. B. Bemnowski, Dr. Z. Jethon, Dr. R. Kwarecki, Dr. Z. Sarol and Dr. M. Wojtkowiak developed a comprehensive program of bioastronautical investigations. They prepared space flights and examined the Polish astronaut candidates with positive results as proven by Col. Hermaszewski. Prof. Dr. Barański of the Committee of Bioastronautics in the PAS created in 1962 one of the most active committees for astronomy, space investigations, CETI/SETI, space law and the history of Astronautics. These committees organized, over the past 30 years, more than 70 national and international scientific symposia and conferences in various Polish towns. Members of these committees of

the PAS took part in all IAF Congresses, conferences of COSPAR, Intercosmos and many other meetings at institutions having an interest in astronautics. They presented hundreds of their papers and results of investigations.

The second task of the PAS was to popularize astronautics and space exploration among the Polish people. This aim was achieved by using the mass media, the press, popular publications, books, public lectures, exhibitions, school seminars and wide contacts with young people. In the last 30 years, the PAS organized in many Polish towns more than 8000 public lectures in various Polish clubs, libraries, cultural institutions and in secondary and high schools. Youth clubs were opened in Gliwice, Kraków and other towns. However, the school boys could not become members of the PAS, because of a society statute of 1956 that clearly determined that only citizens of the Polish People's Republic who were of adult age (18 years old) could be admitted as members of the PAS.

From the beginning the society attached great importance to the education of young people in astronautics. At first seminars were organized for high school students. Prof. Z. Paczkowski and Prof. R. Muster from the Mechanical Faculty at the technical high school in Warsaw, and Prof. Dr. L. Teisseyre at Wrocław, taught and initiated introductory courses on rocket propulsion, rockets and spacecraft flights in the atmosphere and in space, and ballistics at the universities and technical high schools. At Wrocław, obligatory exercises with the students on astronautics and space rockets were also introduced. Prof. Dr. P. Wolański continued these seminars in Warsaw. At Katowice in 1956-1957, the first voluntary seminary for the students in mechanics at the high school of Gliwice was organized. At Kraków University from 1960 to 1975 Prof. Dr. N. Kordylewski, M. Sc. Eng., J. Walczewski and others taught voluntary seminars for students on the subjects of astronomy, rocketry, space flights, bioastronautics and other sciences.

Great efforts were made to educate the young people in secondary schools. Thirty years ago astronomy was a separate subject in these schools, and in proper time it was possible to introduce the elements of astronautics to the teaching of astronomy. However, the number of hours designated for astronomy was, in later years, reduced in the programs of the Polish schools. The teaching of astronomy in many schools was completely eliminated from the school curriculum as a separate subject. Under these conditions some elements of astronomy and astronautics were introduced with such subjects as physics, chemistry, geography and medicine. It always depended on individual knowledge and teacher interest. This situation became critical. The Polish Astronautical Society initiated a program to counteract this problem.

PAS held initial discussions with the Minister of Culture and Education and with the Director of the Institute for Education of the teachers of secondary schools in Warsaw. Having received permission from the Minister and the acceptance of the institute—the PAS organized many seminars for teachers in various Polish towns. The PAS presentations included the most important information on the latest achievements in astronautics, astronomy, space physics, rocketry, space flights, remote sensing of the Earth from orbit, telecommunications, space medicine and space law. The libraries of the PAS were opened for all teachers having an interest

in astronautics. PAS publications provided articles concerning the methods of teaching astronautics in the schools. Nearly all regional branches of the PAS in Poland organized yearly seminars for young people with competitions for the participants and rewards for the best entries and exhibitions. The Committee of Teaching of the PAS initiated various methods of cooperation with young people and youth organizations in Poland.

In 1983, the General Assembly of the Polish Astronautical Society at Frombork changed the membership statute of the society of 1956 by including young people aged 12 to 18. PAS created special circles of the youth in regional branches of the PAS. PAS now has eight regional branches: Katowice, Silesia, Kraków, Wrocław, Poznań, Grudziądz, Olsztyn and Włocławek. The oldest one is the Silesian Branch at Katowice, established two weeks after the first General Assembly of the PAS in 1956 by the undersigned author.

Dr. K. Kordylewski created the second branch at Kraków a few months later. Under the leadership of this great Polish astronomer, the Kraków branch of the PAS has become the greatest and most active in Poland! Following the death of Dr. Kordylewski, M. Sc. Eng. M. Ribiński became the Chairman of the Kraków branch followed by Prof. Dr. T. Rochmański from the Academy for the Coal Mining and Steel Industry. Dr. S. Czarowski from the technical high school at Kraków now serves as head of this branch. The Kraków branch organizes regular sky observations at the two astronomical observatories of Kraków and scientific sessions and expeditions to other countries and remote oceans.

The Warsaw branch of the PAS was established in 1958 by Dr. K. Zarankiewicz. Prof. R. Muster served as the next chairman. Following Prof. Muster's death in 1975, Prof. D. P. Wolański from the technical high school in Warsaw became the chairman. In 1980, Dr. Eng. Z. Krawczyk and now Dr. Z. Galicki were elected. The Warsaw branch has organized the central meeting of the PAS and scientific conferences for the whole of Poland. Following the Silesian Branch, the Warsaw Branch has officially introduced the teaching of astronautics in one of the secondary schools in Warsaw as an experiment. The Warsaw branch was very active organizing the XV IAF Congress in Warsaw in 1964. In 1979, it cooperated with the Committee for Space Law to organize the International Seminar for Space Law of the "Intercosmos." Dr. J. Gospodarek chaired this session.

M. Sc. B. Rompolt and M. Sc. Eng. Schmidt started the Wrocław branch of the PAS. Their most interesting activity of this branch was organizing an astronautical expedition in 1971. They constructed an ultraviolet spectrometer and other instruments, which were launched in several "Vertical" rockets in the Soviet Union with very positive results. Eng. J. Siwy initiated the branch at Poznań in 1979. This branch cooperated with the Institute of Physics of the technical high school at Poznań. In the last 15 years, three new branches were created in the northern parts of Poland. They were initiated by a very active member of the PAS, J. Szware from Grudziądz. The first branch in Grudziądz had as Chairmen M. Sc. I. Kikulska followed by M. Sc. W. Kubwicz. With the Museum of Copernicus at the University at Torun, the Grudziądz branch organized many seminars, exhibitions and meetings especially designed for young people.

Other branches were established in Olsztyn in 1978 chaired by Dr. Eng. Z. Wiśniowski. The Olsztyn branch worked the Space Flight Planetarium at Olsztyn.

The PAS continues to promote astronautics in Poland. The PAS publishes the popular bimonthly *Astronautyka* and the more scientific journal *Progress in Astronautics*.