

O. A. KRASNIKOVA

TO THE ARCTIC IN A BALLOON

Flight to Severnaya Zemlya

IN MEMORY OF OLGA KRASNIKOVA

This publication is the final one in a “trilogy” dedicated to the daring scientific idea to explore the vast expanses of the Arctic using dirigibles, or steerable airships. This idea had captivated European scientists since the late 19th century, but it was only the beginning of the second quarter of the 20th century that saw all the necessary components for the success of this mission finally coming together: impressive achievements in science and technology and a peace, albeit short-lived, that had settled over the Northern Hemisphere. Nevertheless, none of the countries was able to fulfill such a mission on its own. This bold endeavor required the combined efforts of scientists and specialists from different countries, including Soviet Russia, united under the banner of the Aeroarctic – the International Society for the Exploration of the Arctic Regions by Means of the Airship



Zeppelin LZ 127 over Jerusalem, 1931. Library of Congress Prints and Photographs Division. Washington, D. C. 20540 USA



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The daring project to explore the Arctic by airship had a solid ground to take off, which was created by the events of previous years, when successes and failures, forming a bizarre mosaic, served as important lessons for future explorers.

You can find the details of these events in our previous articles.* A brief account of them should, first of all, mention the balloon flight of the Swedish polar explorer Salomon Andrée to the North Pole in the summer of 1897 (this flight ended tragically); international meteorological observations with unguided aerial vehicles (balloons, probes, and aerostats), initiated by the Russian inventor

* For more details about these events see SCIENCE First Hand, 2016, N 3 (45) and 2025, N 3 (70)

Key words: Aeroarctic Society, trans-Arctic expedition, aeronautics, Leonid Breitfuß, Walther Bruns' project

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Mikhail Pomortsev; the Arctic journeys of the great polar explorers Fridtjof Nansen, Roald Amundsen, and others; and the 1910 expedition to Spitsbergen organized by Ferdinand von Zeppelin's company. Finally, an important milestone was the discovery in 1913 by the Russian Arctic Ocean Hydrographic Expedition of an unknown archipelago north of the Taimyr Peninsula, which was named Emperor Nicholas II Land (since 1926, Severnaya Zemlya). It is Russian scientists who joined

the permanent Polar Commission, set up to explore this archipelago, who are the main characters of this last chapter of our story, which has been gradually unfolding on the pages of our magazine.

Research in the Arctic came to a halt with the outbreak of World War I; only in 1919, Walther Bruns, a German pilot and former airship commander, put forth the idea of commercial use of aircraft by proposing a trans-Arctic airship route from Europe to Japan and the United States, which substantially



Leonid (Ludwig Gottlieb) Breitfuß, a Russian-German origin zoologist and hydrographer; Arctic explorer

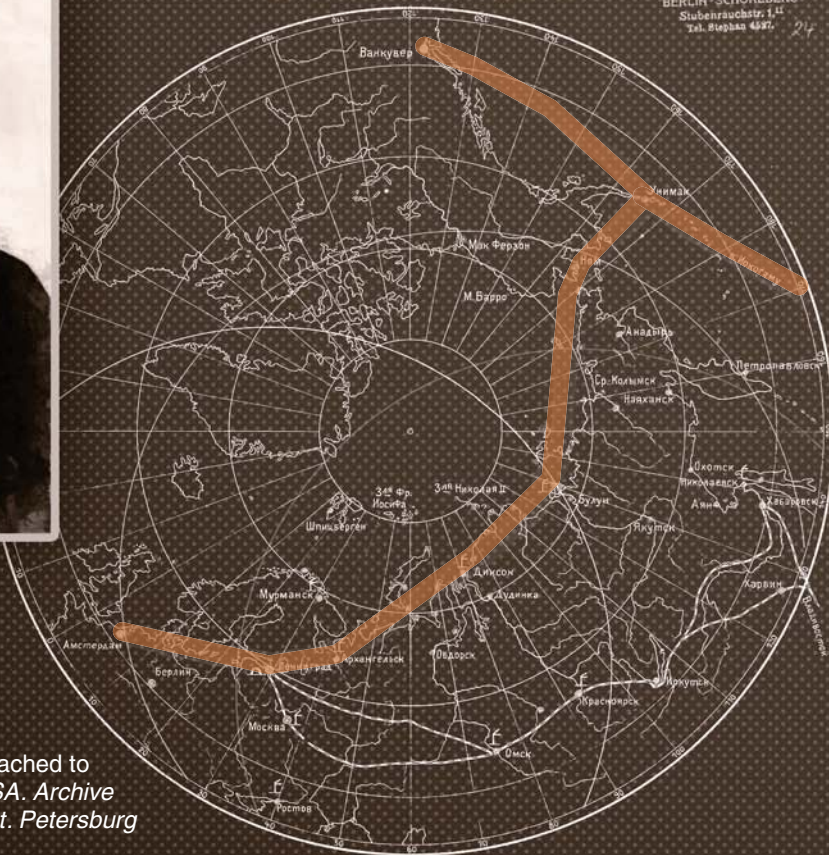
Above is Captain Walther Bruns. Germany, Berlin. Public domain

On the right is a handwritten route map attached to Captain W. Bruns' project, 1924. SPB RASA. Archive Ref.: Coll. 75 / Inv. 1 / Doc. 95 / Pg. 240. St. Petersburg



Карта к проекту кап. Брунса

Dr. Leonid Breitfuß
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reduced the flight time. This idea received great support from hydrographer and zoologist Leonid (Ludwig Gottlieb) Breitfuß, one of the most active members of the Polar Commission. He also made an important addition to the proposal: the reconnaissance route was to pass over Emperor Nicholas II Land. It was this project that laid the cornerstone for establishing in 1924 the International Society for the Exploration of the Arctic Regions by Means of the Airship (the Aeroarctic), with Nansen himself becoming the society's chairman.

The project was submitted to the Soviet government for consideration and forwarded to the Polar Commission of the Academy of Sciences. In this project, the émigré Breitfuß, being a true patriot of the North, particularly emphasized its importance for Russia's Arctic regions: "...Captain Bruns' project, as presented below... should bring enormous progress to all branches of both special polar research and technical equipment in hard-to-reach polar regions since it will provide full capability to easily and quickly overcome huge, inaccessible areas; carry out all kinds of research; deliver, to any location, both people and cargo, such as radio and geophysical stations with full equipment and substantial life supplies; and, finally, rescue people and valuable cargo from wrecked ships, etc. <...> for the rational use of the forest, fish, fur, and mineral resources of North Siberia and proper development of sea and river shipping along with a hydrometeorological network, it will also be necessary to build a more extensive network of cultural and administrative centers throughout the vast Siberian taiga, which could lead to the appearance of nearby settlements of future *Kulturträger* <...> Another, more extensive application of Bruns' project should result in a grand undertaking with global implications and revive the ice-bound polar desert, opening up trans-Arctic traffic between Europe and the cultural centers on the northern shores of the Pacific Ocean."

The Soviet press gave the project a warm reception, but the Polar Commission reacted negatively although meteorologist and hydrologist Vladimir Yu. Wiese called it the first step toward using the Arctic as an air route, which would help maintain reliable communication with the network of polar meteorological stations at high latitudes. Nevertheless, the Academy of Sciences decided against the participation of the Soviet Union in the implementation of the project, citing its insufficient backing and extremely high cost. Admittedly, these reasons for refusal are compelling, but one cannot ignore the role of the political situation – Emperor Nicholas II Land had not yet been explored by Russian scientists, and the Soviet Union was reluctant to grant this right to foreign expeditions while the Soviet party, who had prepared rescue

stations for the foreigners, would have to remain merely a passive observer.

And here the situation finally changes. The project is given official status and approved for review by the highest government agencies. The reason is simple: this time, Soviet Russia becomes a full participant in the expedition, and Russian scientists are granted membership in the Aeroarctic Society.

Soviet Aeroarctic

In order to elaborate Bruns' project, a special commission was set up under the USSR Council of People's Commissars (Sovnarkom). The commission was chaired by Academician Nikolai P. Gorbunov, who was then rector of the Bauman Higher Technical School (Moscow). In February 1926, he addressed a proposal to Glavnauka (i.e., the main administration for science, arts, and museums), the USSR Academy of Sciences, Aviakhim (i.e., the Soviet mass public organization dedicated to promoting aviation and developing chemical industry), and other leading public agencies and departments to nominate candidates for the future Soviet Aeroarctic group. The lists of candidates communicated by the agencies included distinguished individuals, excellent specialists in their fields, many of whom were members of the Polar Commission of the Academy of Sciences or had participated in its activities.

At a regular meeting of the Polar Commission in May 1926, its academic secretary, Alexander I. Tolmachev, while introducing his colleagues to new international polar exploration projects, spoke about Bruns' proposal and Breitfuß' initiatives and publications and invited his colleagues to join the Aeroarctic. Wiese supported Tolmachev, noting that some of the Russian scientists were already members of the society. The audience welcomed the idea of establishing a Soviet Aeroarctic group, and the very next day, at a meeting of the Commission for Supporting the Activities of the USSR Academy of Sciences, it was proposed to introduce into this group Alexander P. Karpinsky, the Chairman of the Polar Commission, as well as the commission's active members: Alexei A. Byalynitsky-Birulya, Arkady V. Voznesensky, and others. The support given by the Russian scientists to the Aeroarctic was largely due to the legendary Nansen being the society's chairman; moreover, many of them had experience of working together with Breitfuß in previous years.

In order for Soviet scientists to participate in the upcoming international congress held by the Aeroarctic, one had to urgently put the Soviet Aeroarctic group on an official footing, which was done on October 21,

не превысит 4 милл. марок (на все предшествующие полярные экспедиции была израсходована сумма в 85 милл. мар.). Дирижабль, вероятно, будет построен на верфи Цепелина инж. Экенером на средства, собранные по подписке в Германии. К предварительным работам уже приступлено.

Из докладов можно упомянуть еще доклад ленинградского профессора Самойловича о геологических и биологических задачах исследования полярных стран и доклад иркутского профессора Шостаковича о влиянии полярного климата на климат Сибири. Собрание вместе с докладчиком признало возможность организации постоянных и длительных наблюдений над климатом в полярных широтах и постановило просить Советское Правительство об устройстве ряда метеорологических станций в разных пунктах Сибири и за полярным кругом.

Б. В.

Article by B. Vorobyov "Exploration of polar countries" about the Aeroarctic Congress in Berlin in 1926, published in the magazine *Vokrug sveta* ('Around the World'). 1927. N 1. P. 2

Arctic Regions by Means of the Airship under the Institute for the Study of the North – was made at a meeting of the Scientific and Technical Directorate (STD) of the Supreme Council of the USSR National Economy, with Veniamin M. Sverdlov himself acting as the key speaker. The task of overseeing the group's activities was commissioned to Gorbunov, then a member of the Presidium of the STD Board.*

Crash of the Italia

Soon began the preparations for the Second Congress of the Aeroarctic Society, while in Friedrichshafen, Germany, airship constructors embarked on building the LZ-127 airship (later named *Graf Zeppelin*), which German aeronaut Hugo Eckener had promised to provide for the polar expedition planned by the Aeroarctic. It was intended that the participants of the upcoming congress would be involved in preparatory works for this project; the program even included a trip to Murmansk for everyone to inspect the site of the LZ-127's mooring mast.

Around the same time, two trans-Arctic airship flights took place under the command of Umberto Nobile, a renowned Italian polar explorer, pilot, and airship constructor. In the spring of 1926, the airship *Norge* flew from the Spitsbergen Peninsula across the North Pole to Alaska. Amundsen, too, was part of this expedition of 16 people. On the night of May 11–12, the *Norge* reached

* From the minutes of the meeting held by the STD Board Presidium to the Supreme Council of the USSR National Economy on the issue of organizing a Soviet group of the international society for Arctic exploration by airship (*Russian State Archive of the Economy. Archive Ref.: Coll. 3429 / Inv. 61 / Unit 263 / Pg. 68*)

the North Pole, and the explorers spent two and a half hours above the pole. Although the expedition encountered some difficulties, it ended successfully, which became yet another proof of the feasibility of using airships to explore polar regions.

Nobile, who was reaping his laurels, began to prepare for his next flight by launching the works to build the airship *Italia*. The second expedition set out from Spitsbergen on the morning of May 23, 1928, and by nightfall, with a strong tailwind, they had reached the North Pole. There, the expedition members dropped onto the ice the Italian flag and the oak cross they had received from the Vatican. But on May 25, when flying over the Barents Sea, the airship got encased in ice and crashed. The rescue operations involved several missions from Italy, Norway, the Soviet Union, and other countries. These dramatic events unfolded less than a month before the start of the second congress of the Aeroarctic.

The Second International Congress on Arctic Exploration by Airships was held in the Soviet Union from June 18 to 23, 1928. At that time, Soviet Russia was vigorously participating in the international exploration of the Arctic, so no wonder that Leningrad became the congress venue. Its chairman Nansen said in his welcoming speech at the opening ceremony in the Great Conference Hall of the USSR Academy of Sciences that that meeting was ushering in a new era in the history of the Arctic and informed those present that one of the congress' goals was to formulate a program for the practical development of the North.

Of course, throughout the congress, the scientists were closely following the progress of the rescue operations in the Barents Sea: the search for the surviving members of Nobile's expedition and their rescue by the Soviet icebreaker *Krasin*. News updates on this story made headlines worldwide. Nansen himself called the crash of the *Italia* a lesson and a warning for all explorers of the polar regions.

The Second International

The congress (conference) carried out extensive preparations for the international Arctic airship expedition, scheduled to take place in 1929. The participants developed a detailed plan for a trans-Arctic air route from Europe to Asia via Siberia, designed to reduce the travel time from 16 to 5 days. The route began in Berlin and went via Turukhansk, Olekminsk, and Harbin to Osaka.

Much attention was given to organizational, as well as scientific, issues. Several newly organized special commissions began working, with Soviet scientists on board: Pavel V. Wittenburg was part of the geographical commission; Vladimir Yu. Wiese and Pavel A. Molchanov became members of the commission for meteorology and

К воздухоплавательным арктическим экспедициям.

(К итогам берлинского воздухоплавательного съезда по исследованию Арктики).

Замечательный в прошлом месяце в Берлине съезд „Международного общества по исследованию полярных стран с помощью воздушных кораблей“, несомненно, послужит началом, первой ступенью того большого дела, осуществление которого, надеемся, осуществится в ближайшие годы. Вполне понятен тот интерес, который возбудил повсеместно, детально разработанный общественным проектом исследования с дирижаблем полярных стран, общественно, в которое входят ныне 19 стран, 19 разнообразных международных интересов!

Несомненно, общество подготавливает дорогу для большого и важного дела, важного не только для науки, но также и практически и прежде всего экономически. Припомним, что не так давно, год тому назад, германский капитан Вальтер Брунс совместно с двадцатью виднейшими специалистами, географами, метеорологами, воздухоплавателями, инженерами и знатоками полярных стран, наметил даже наиболее удобный и практичный полярный маршрут, где наш Мурманск должен был служить исходным пунктом как, самый северный порт в Европе, соединенный с центрами железной дороги. Осуществляя этот маршрут, мы затратили бы лишь одну четвертую часть времени сил и энергии, которые необходимы, чтобы, на перелет из Листердала в Июганга, вконец 30 дней, необходимых для совершения этого пути, в обычных условиях, мы затратили бы всего лишь 7 с половиной суток. И вряд ли мы ошибаемся, если предположим, что скрытая подоплека единодушья и интереса и перелетки, которые обнаружили все участники совещания была эта цифра, а не мифическая земля Гренландия.

Как выяснилось из беседы с одним из представителей СССР на Берлинском совещании Г. П. Горбуновым, конгресс носил официальный, чисто научный характер. Обсуждались лишь те научные вопросы и намечался лишь тот ряд исследований, которые бы обеспечили кораблю некоторую устойчивость в смысле его ориентирования в совершенно неизвестных наив, никак не исследованных полярных областях, такие обсуждения, вопросы и методы исследования Арктики вообще.

Следует учесть огромные трудности, которые неизбежно связаны с перелетом в областях, неизвестных нам не только территориально, но и совершенно неизвестных с климатологической стороны. Нельзя думать, исходя из удачных полетов через северный полюс Ангушона и Бира, что теперь проблема перелетов в Арктику решена окончательно. Чрезвычайно смелые и рискованные полеты этих двух выдающихся полярных исследователей интересны лишь со спортивной точки зрения, но не с точки зрения практического дела, так как методы те условия исследования, которые можно сказать еще не имеют своих предшественников и должны начинаться с нуля.

Необходимо хорошо изучить и быть готовыми к тем опасностям, которые в любой час грозят кораблю, пущившемуся в столь рискованное плавание. Нужно до известной степени предвидеть бури, осадки, облачность, туманность и т.п.

По общему впечатлению участников съезда, проект полярных полетов с целью пока чисто научной, т. е. изучения природных условий Арктики, признан вопросом чрезвычайно важным, должны на организацию будут изысканы и дело в скором времени осуществлено.

Этот первый серьезный конгресс для участников его представил возможность познакомиться друг с другом, выяснить, кто, чем может быть полезен в последующей совместной работе и высказывать мнения наиболее компетентных в рассматриваемом вопросе специалистов. Всеми участниками

проект, уже существующие и намечающиеся постройкой радио-станции, о чем речь ниже, окажут здесь незаменимую помощь. Возвращенные в сеть общей работы, они дадут возможность заранее ознакомиться с полетом корабля с тем, что его ожидает в ближайшие время, и принять необходимые меры и в соответствии с этим даже выбрать тот или иной путь следования.

Вот эти-то элементарные условия искомого плодотворного летного достижения и был повешен Берлинский конгресс. Прежде всего была заслушана речь двадцати специалистов-полярников, делавших ставку на наиболее важный вопрос исследования Арктики. По вопросу о геологическом исследовании полярных стран сделал доклад директор нашего научного института по наукам о земле Р. Д. Самойлович. По полярной метеорологии докладывал наш же представитель Шестакович. Но наибольший интерес вызвал доклад председателя конференции Фр. Нансена о необходимости самого тщательного изучения полярных льдов и течений, а также немецкого ученого Бойкова, выступившего с совершенно новым проектом, фотографического исследования полярных областей с дирижаблем. Проект этот, интересен, особенно в том отношении, что совершенно устранит кропотливую, громоздкую и мало пригодную в полярных условиях работу географов.

После продолжительного обсуждения деталиные стороны вопроса, как-то: какой тип дирижабля следует признать наиболее пригодным для полетов в крайних полярных областях, съезд перешел к обсуждению наиболее рационального использования всевозможных достижений науки и техники в целях полярного воздушного плавания. Прежде всего предположено, в ближайшие время осуществить постройку трех необходимых в условиях полярных плаваний радио-станций на Ново-Сибирских островах, на земле Франца-Иосифа и на северной оконечности Новой Земли, на мысе Желанин, причем средства на постройку должны быть предоставлены СССР и Норвегии. Германия же снабжает станцию аппаратами. Личный состав станции должен быть какой нибудь одной национальности (русские, норвежцы и немцы), неминуемо имеющая столкновения. Затем были высказаны мысль о чрезвычайной желательности, с целью изучения полярных течений, вторичной посылки с корабля на три года известного полярного судна „Медв“ в Ново-Сибирские острова, в дрейф, по тому же приблизительному маршруту, по которому двигался знаменитый „Фрам“ Нансена. Научные же наблюдения не должны ограничиваться фотографической съемкой с дирижабля, а известные пункты дирижабля необходимо будет снимать на землю для производства проверок, а также сбора проб воды, что послужит ценным материалом для производства биологических и гидрологических исследований района, представляющего в этом отношении для науки полнейшую загадку. С борта же корабля можно фотографическим способом можно будет с удобством производить метеорологические наблюдения, исследовать атмосферное электричество, наблюдать магнитные явления и прочее.

решено всемерно поддерживать зарождающееся предприятие международного масштаба. Необходимо отметить, что группа советских ученых, как по своей энтузиазмности, так и по составу, была во все время съезда окружена особым вниманием, причем было высказано пожелание, чтобы русские ученые и в дальнейшем принимали столь же деятельное участие в исследовании полярных стран, которые принимали до сих пор.

Б. Генрихов.

Article by B. Genrikhov "Revisiting Arctic aeronautical expeditions: outcomes of the Berlin Aeronautical Congress on Arctic Research" in the magazine *Karelo-Murmanskii krai* ('Karelo-Murmansk Region'). 1927. N 1. P. 81–82

aerology; Boris L. Isachenko and Petr Yu. Schmidt joined the biological commission; etc. Members of these commissions together formed a Research Council.

Over the course of five days, the congress held nine sessions, at which reports were presented on the various aspects of natural history of the North. The final resolution included decisions on organizing and conducting meteorological observations on northern archipelagos and islands, setting up new weather stations, and carrying out preliminary work for the next International Polar Year.



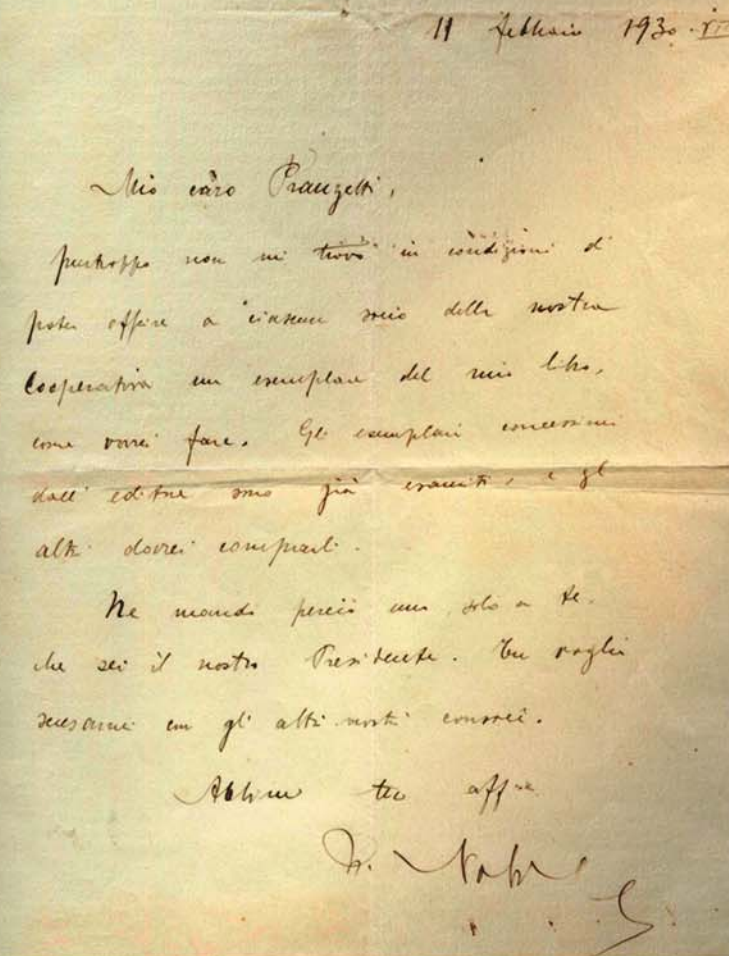
Airship Norge, 1900. Library of Congress
Prints and Photographs Division Washington,
D.C. 20540 USA control car



Above is a letter sent to U. Nobile on April 29, 1929,
from Stolp (then Germany) during the *Italia*'s stopover
for repairs. Photo from D. Pankratov's archive (Moscow)

Map of the *Italia*'s last flight from Yu. Geko's book *50 dnei:
gibel' dirizhablya Italiya* (50 Days: The Death of the Italia),
Leningrad: Priboi, 1928

Cover of U. Nobile's book *A Flight over the Polar Regions*



A signed letter from General Umberto Nobile to General
Teodoro Pranzetti on the publication of his new book
L'Italia al Polo Nord (1930) about the expedition
and the tragedy of the *Italia*.

Text of the letter:

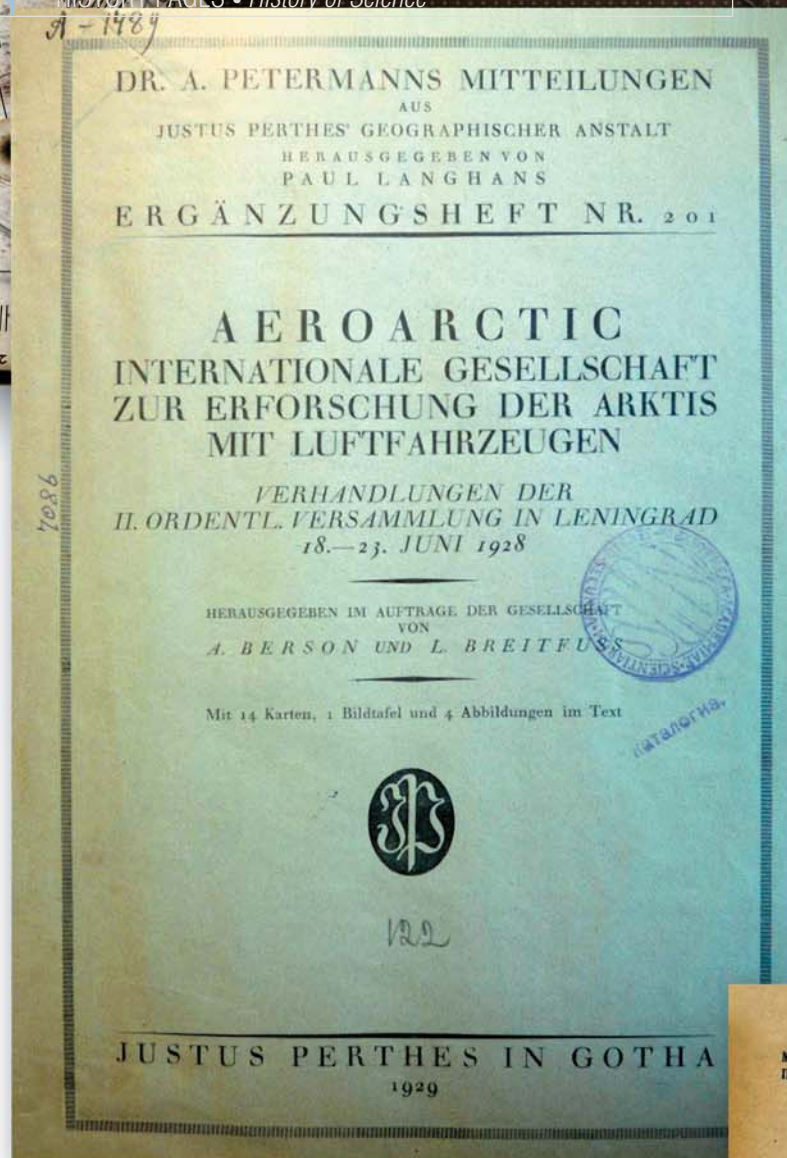
"My dear Pranzetti, unfortunately, I cannot offer every
member of our Society a copy of my book, as I would
love to. The copies provided by the publisher have
already sold out, so everyone else has to buy the book.
Therefore, I am sending one to you, since you are
our President. I ask you to give apologies to our other
members. Sincerely yours, Umberto Nobile."

Photo from D. Pankratov's archive (Moscow)

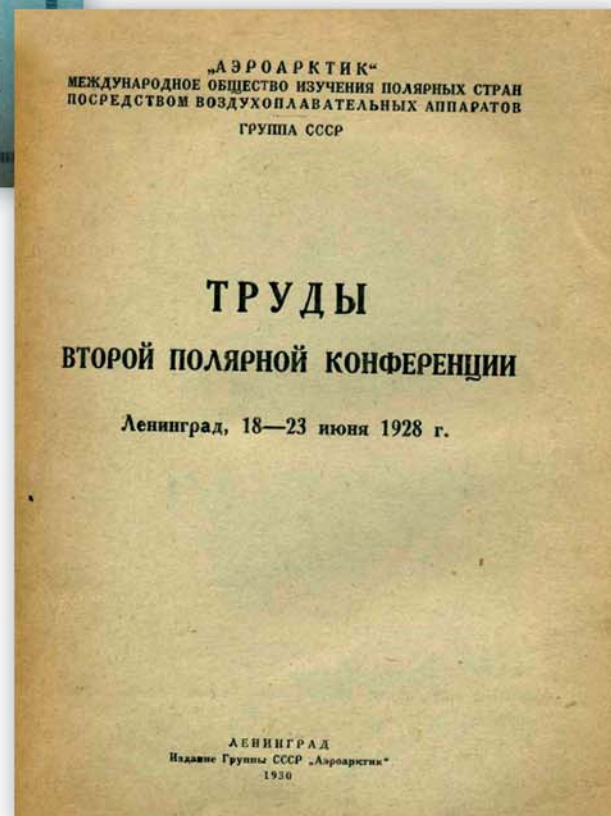
The meeting's papers were published in German and
Russian. The Russian edition opened with Bruns' paper
"Report on the results of a trip to the Kola Peninsula and
Murmansk," dedicated to choosing a town for an airship
base in the Soviet Union and searching for a site
for an airship mooring mast.



Italian aeronautical engineer and Arctic explorer
Umberto Nobile in military uniform with his dog Titina.
Library of Congress Prints and Photographs Division,
Washington, D.C. 20540 USA



Title page of the proceedings of the Second Polar Conference, published in Germany (A. Berson and L. Breitfuß. Gotha, 1929).
Cartography Sector, RAS Library, St. Petersburg



Title page of *Proceedings of the Second Polar Conference* (Leningrad: Izd. Grup. SSSR Aeroarktik). The conference took place in Leningrad in June 1928.
Cartography Sector, RAS Library, St. Petersburg

Regarding the latter, even before the meeting was over, engineer E. P. Ikonnikov had surveyed the towns of Kola, Aleksandrovsk, and Murmansk in search of the most suitable location to set up an airship mooring mast, whose cost was estimated at 20,000 rubles. He deemed the vicinity of Murmansk the most appropriate; when the congress concluded, some of its participants, including Bruns, went there to finalize the choice of the construction site, in accordance with the proposal made as early as in the 1924 draft.

In the summer of 1928, the Arctic Commission, chaired by Sergei S. Kamenev, was established under the USSR Sovnarkom to develop a plan for scientific research in the Soviet Arctic. The commission included members of the Soviet government and leading organizations, such as the USSR Academy of Sciences, Association for the Study of the Northern Seas, Osoaviakhim, etc., as well as the Soviet Aeroarctic group. The primary objectives were declared to be the establishment on Franz Josef Land, Severnaya Zemlya, and Novaya

Zemlya of geophysical observatories with floating facilities and communications equipment and the construction on Soviet territory "of mooring masts as bases for scientific airship expeditions in the Arctic." The organizing of airship mooring masts and ensuring the very possibility of exploring the Arctic on board an airship was entrusted to the Aeroarctic Society. One of the conditions under which the Soviet government granted permission for flights over the USSR territory was the participation of Soviet scientists in the preparations and realization of the flight as well as processing of all the scientific results.

However, the airship mooring mast in Murmansk was never built. Perhaps, as a consequence of the Italia disaster or for some other reasons...

Article by Walther Bruns about his trip to Murmansk in search of a site for an airship mooring mast and an illustration from this book (*below*).
Cartography Sector, RAS Library, St. Petersburg

PETERMANN'S GEOGR. MITTEILUNGEN / ERGÄNZUNGSHEFT 201

TAFEL I



Abb. 1. Blick auf den Kolafjord bei Murmansk mit Leuchtturm

16 Bruns: Bericht über das Ergebnis der Studienreise nach Murmansk am Kolafjord

BERICHT ÜBER DAS ERGEBNIS DER STUDIENREISE NACH MURMANSK AM KOLAFJORD

von Walther Bruns, Generalsekretär der Aeroarctie
Mit 2 Abbildungen, Taf. 1

Der Vorstand der Aeroarctie hatte schon vor der 2. Generalversammlung der Aeroarctie bei der Landesgruppe U.S.S.R. angeregt, im Anschluß an die Tagung in Leningrad eine Sonderkommission an den Kolafjord zu entsenden, um die Frage zu studieren, unter welchen Bedingungen sich eine Luftschiffbasis für arktische Luftschiffexpeditionen dort schaffen lassen würde. Mit der Führung der Studienkommission hatte der Vorstand seine Mitglieder, Prof. Berson als Meteorologen und den Verfasser als Luftschiffführer beauftragt; die Reise selbst wurde von Prof. D. Rudnew geleitet. Sehr dankenswerterweise schlossen sich der Fahrt nach Murmansk noch folgende Herren an: Prof. Brandt (Prag), Prof. Freimann, Peter Freuchen, Dr. Grothwahl, Prof. Haußmann, Dr. Hildebrandt, Dr. Mittelmann, Prof. Moltschanow, Prof. Rynin, Dr. Villinger, Prof. Weinberg, Dr. A. Worobiew und mehrere Herren von der Verwaltung der Murmanbahn.

Die Reise war durch unsere Landesgruppe U.S.S.R. ausgezeichnet organisiert und wurde von der Regierung und von den Behörden in jeder Weise erleichtert und unterstützt.

Zum besseren Verständnis der nachfolgenden Erörterungen erscheint es zweckmäßig, voranzuschicken, welchen Zwecken eine Luftschiffbasis nördlich des Polarkreises überhaupt dienen könnte.

Die Aufgaben solcher Luftschiffbasen gliedern sich unter zwei Gesichtspunkte. Gewisse Anlagen sollen nur zeitlich vorübergehender Natur sein und der Durchführung und Sicherung der nunmehr für 1930 angesetzten Luftschiffexpeditionen dienen. Andere Einrichtungen werden für längere Zeit zu schaffen sein und sind dann die Hauptstützpunkte in dem großen Forschungsplane der Aeroarctie, der auf eine möglichst lange Reihe von Jahren systematische Beobachtungen mittels eines funkentelegraphischen Netzes arktischer Beobachtungsstationen vorsieht.

Eine der wichtigsten Fragen, die sich die Aeroarctie vorzulegen hat, ist, wie weit man bei der Errichtung von Luftschiffbasen nach N gehen soll. Die Beantwortung richtet sich nach dem Aktionsradius des zur Verfügung stehenden Luftschiffes, nach der Zugänglichkeit des in Aussicht genommenen Hafens zu Lande oder zu Wasser, nach den geographischen und topographischen Verhältnissen und nicht zuletzt den meteorologischen Bedingungen. Aber damit läßt sich doch noch keine praktisch brauchbare Antwort erzielen. Man muß nämlich abwägen, ob für die Bedienung der Hafenanlage und das Manövrieren mit dem Luftschiff sich genügend Personal heranziehen und unterbringen läßt, ob die damit verbundenen Kosten in einem erträglichen Verhältnis zu den Gesamtkosten der Expedition stehen und ob der durch hohe nördliche Lage des Hafens erhoffte Vorteil so groß ist, daß er erhöhte Ausgaben rechtfertigt.

Natürlich ist es wünschenswert, so nahe wie möglich an das arktische Gebiet oder sogar in dieses zu gehen, selbst wenn ein Luftschiff mit sehr großem Aktionsradius zur Verfügung steht. Die erheblichen Gewichte, die bei einem kürzeren Annarsch gespart werden, kann man dann zur Erweiterung des Forschungsplanes und zur Erhöhung der Sicherheit verwenden.

In ihrem bisherigen Plane (siehe hierzu den Vortrag des Verfassers auf der ersten ordentlichen Aeroarctie zu Berlin, Ergänzungsheft 191 zu Peterm. Mitt.) hatte Luftschiffbasen Murmansk auf Kola und Nome auf Alaska auf Grund sehr eingehender Beratungen nach den oben aufh. Naturgemäß konnte aber eine Reihe von Fragen nur auf rein örtlichen Verhältnisse mit genügender Sicherheit entschieden nan sich zur Entscheidung dieser Kommission, ommission mit der Prüfung der Frage beschäftigen, ob die Gegend is für nur einmalige Verwendung 1930 geeignet ist.

By 1928, the Aeroarctic Society had 271 registered participants, i.e., 260 individuals and 11 societies from 20 countries: 11 from Austria, 1 from Bulgaria, 10 from Czechoslovakia, 5 from Denmark, 4 from England, 9 from Estonia, 6 from Finland, 8 from France, 102 from Germany, 3 from Holland, 9 from Italy, 7 from Japan, 2 from Latvia, 7 from Norway, 8 from Poland, 49 from the Soviet Union, 9 from Spain, 6 from Sweden, 5 from Switzerland, and 10 from the United States. The congress was attended by 22 scientists from Norway, Germany, Poland, Italy, Finland, Denmark, and the Soviet Union

*Am. 1920
Tolmachoff
Breitfuß
Leibniz*

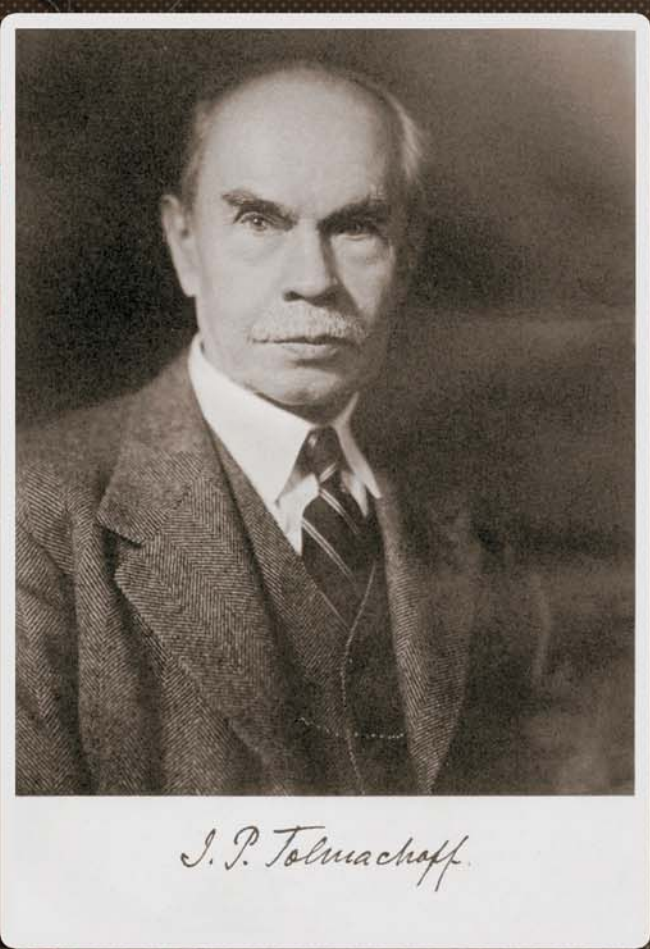
**INTERNATIONAL SOCIETY FOR THE EXPLORATION OF THE ARCTIC REGIONS
BY MEANS OF AIRCRAFT
"AEROARCTIC"**
 Central Office: BERLIN-NEUBABELSBERG, GERMANY
 -49-
AMERICAN SECTION
 P. Tolmachoff, Secretary
 CARNEGIE MUSEUM
 PITTSBURGH, Pa., U.S.A.
 9. April 1929.

Дорогой Теодор Льюис,
 Спасибо за письма от 11 февраля и 15 Марта, за отзыв
 Вашей статьи о Полюсе и за мои отдельные отписки из Арктики, а также
 и за исполнение моих поручений.
 Я показываю, что не удалось подняться с Бруноом и направить
 его в Канаду. Я думаю, что организация группы там можно было бы осуществи-
 ть, только настали на определенных людей, вроде того как я в свое время
 устроил заповед. И заповед Бронгер-Латова очень любезно возвратили, но от
 организации уклонились, а через несколько дней согласились. Впрочем,
 теперь уже поздно об этом толковать.
 С Навоном я встретился за завтраком в одном клубе, где
 он говорил о эде войны, о том, что следующая война погубит блага цивили-
 зации, но ничего или почти ничего о наших планах. Мне с ним удалось
 только перекинуться несколькими словами, а затем по американскому обы-
 чью снялись. Встречу прилагаю. Его поездка дала конечно много. Вечту,
 конечно поставят, хотя пока я еще не имею определенных сведений.
 Флемингу удалось объяснить Бруноу, что мы не так легко
 можем получать деньги, результатом чего и явилось согласие посланного
 на предоставление Американской группе 300 долларов. Мне однако этой
 поддержки уже не придется пользоваться, т.к. группу ршено переформи-
 ровать, перенеся деятельность главнейше в Вашингтон. Сейчас ведутся по-
 реговоры с назначенным председателем, флеминг берет на себя секретарство,
я б.м. остаюсь казначеем, а вернее всего на переизборах сойду со сцены.
 Бауер формально broken down, чем покрывается все что угодно, от легкой
 невравстенности до полного расстройства.
 От фирмы Bornträger мы получили проспект геологической
 карты всего света и ее уже выписали для библиотеки музея. Однако, гео-
 логический глобус всетаки существует, т.к. я в свое время вынул его в
 Петербурге. Не могли-ли бы Вы выписку из моего предыдущего письма от-
 носительно этого глобуса направить ~~ОБЩЕМУ~~ Max Wed in Leipzig, Kölnigstrasse-
 3. Он наверно сумеет его отыскать и доставить.
 По поводу фирмы Bornträger'a у меня к Вам есть довольно

16/20
Max Wed

сложная просьба, которую Вы, однако, вероятно, сможете выполнить при по-
 мощи простого телефонного разговора. Я считаю, что они мне должны не-
 сколько марок за рефераты моих статей, которые я послала отсюда для
 Geologisches Zentralblatt, которая всё были напечатаны. Гонорара я,
 однако, не получила и не вспомнил бы о нем, если бы меня не попросили
 из России уплатить в Германии за заказанные в Москве фотографии. Я и
 хотел попросить Вас узнать от Борнтрагера, что они мне должны, если воз-
 можно получить эти деньги, но мне не послать, а уплатить за счет
 P. F. Геккера в Ленинграде 4 руб. 25 коп., т.е. их эквивалент, Dultz und Co.
 Buchhandlung und Antiquariat in München, Landwehrstrasse 5. Очень меня
 обижает исполнением этой просьбы.
 Прилагаю чек подписки на Арктику за 1929 год для
 S. P. Ferguson, 1329 Fairmont Street, Washington, D. C., U.S.A.
 Статьи свое я приготовил в конце этого, начал будущего ме-
 сяца. В настоящий момент дохнуть некогда.
 Спасибо за хлопоты и справки относительно возможности по-
 пасть в Петербург; из это никогда сильно не надбился, но попутать почту
 считал всетаки не лишним.
 Кажется пока что это все. Желаю Вам всего лучшего.
 Ваш
I. P. Tolmachoff

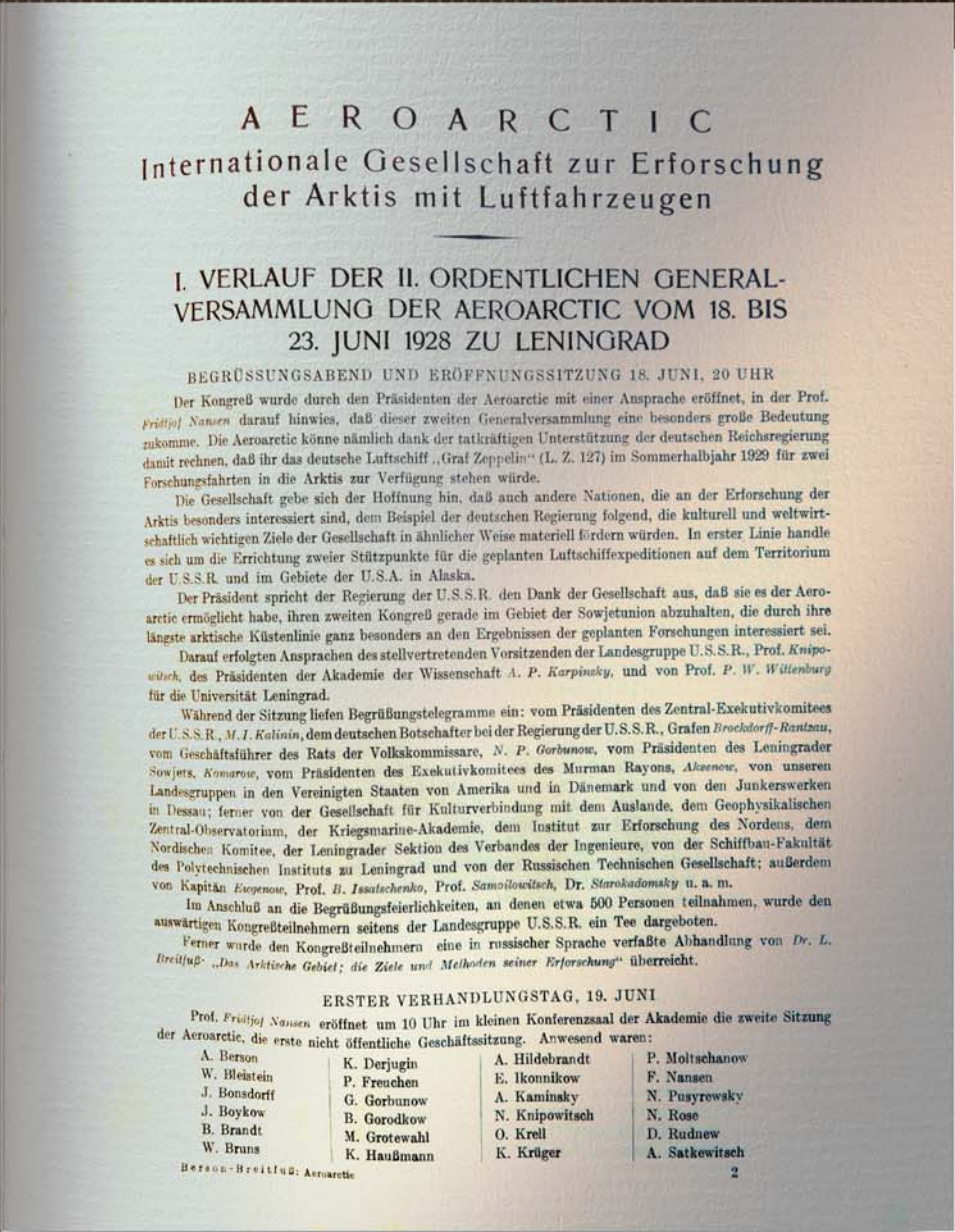
Correspondence between I. P. Tolmachoff and L. Breitfuß
 Leibniz-Institut für Länderkunde. Leipzig. Nachlass
 der Aeroarctic. 851/8. Photocopies courtesy of German
 historian B. Schennerlein



Innokenty P. Tolmachoff. End of the 1940s, United States. Cartography Sector, RAS Library, St. Petersburg

The Aeroarctic in the New World

Simultaneously with the events in Europe and the Soviet Union, efforts were underway on the American continent to establish their own Aeroarctic group. It was chaired by the renowned radio and electrical engineer John Adam Fleming, and the position of secretary was entrusted to Innokenty P. Tolmachoff (Tolmachev), a Russian geologist, geographer, and paleontologist, who had led several crucial polar expeditions and had been living and working in Pittsburgh, Pennsylvania, since 1922. This was likely no coincidence, suggesting that in those years, scientists and scholars from different countries were still able to correspond fairly freely and regularly, exchange opinions, develop scientific plans, and send/receive scientific literature.



ARCTIS FOR THREE DOLLARS

The First Congress of the Aeroarctic Society, held in Berlin in 1926, made the decision to publish a specialized journal, released four times a year, which would allow scientists to exchange views on all the aspects of polar research. The journal was supposed to publish papers not only in German but also in other languages. However, publication of the journal was delayed due to financial reasons. The journal was to be distributed by subscription, and the annual subscription price was initially quite high, requiring J. Perthes Publishing House to secure substantial extra funding. Speaking at the opening of the Second Congress in Leningrad, Prof. Georg Wegener, chairman of the German Aeroarctic group, expressed hope that the subscription price could be reduced to allow all members of the Society to subscribe.

Thus, the annual subscription price was soon set at three dollars, and the first issue of the new *Arctis* journal was published in April 1928. The funds to support the Aeroarctic Society and publish the journal came from membership fees (at least one dollar per year) and from contributions made by the governments of the countries participating in this international cooperation. These contributions depended on the population size of the countries. Thus, countries with populations of less than 2 million people paid \$10, while those with populations exceeding 50 million paid \$300. As a result, since 1928, the total amount of all government subsidies averaged approximately \$2700 annually (for comparison, the average monthly salary of Soviet workers and employees in 1928 was 59 rubles, or \$30)

Tolmachoff indeed maintained correspondence with many of his colleagues not only from the Soviet Union but also from other countries, including with Breitfuß. Naturally, he knew about the establishment of the Aeroarctic and about Breitfuß' addenda to Captain Bruns' project, i. e., to explore the northern polar region, including Emperor Nicholas II Land, by means of the airship. After all, it was Tolmachoff who authored the very first project to explore the newly discovered Emperor Nicholas II Land and initiated the establishment of the Polar Commission under the Academy of Sciences, which was tasked with preparing this research mission. Tolmachoff must have considered this project one of the most fascinating endeavors in his life, and his participation in the American Aeroarctic group could have brought him closer to fulfilling his dream.

Initially, Tolmachoff launched a massive campaign to support the establishment of the American Aeroarctic group; he sent personal invitations to dozens of people. The preserved correspondence between Breitfuß and Tolmachoff revealed several new pages in this story. For example, the letters contain



Hugo Eckener and the Graf Zeppelin (Lakehurst, New Jersey, 1928). Library of Congress Prints and Photographs Division. Washington, D. C. 20540 USA <http://hdl.loc.gov/loc.pnp/pp.print>

information about Tolmachoff's articles published in the journal *Arctis*, about his plans to participate in the Nansen-led expedition, and about an unsuccessful attempt to organize a Canadian Aeroarctic group.

Tolmachoff personally informed Nansen of his desire to participate in the planned expedition, but later he learned from Breitfuß that the expedition team would be small and would include journalists in addition to scientists and

specialists. Tolmachoff would not have been able to join unless the US government had nominated him for political reasons. Therefore, the question of his participation in the expedition never came up again.

As for Tolmachoff's activities as secretary, they were limited to collecting and sending funds for *Arctis* subscriptions, sending out questionnaires, etc. The scientist complained that he was wasting a lot of precious time and even considered leaving his position as secretary unless an assistant had been found. In April 1929, he took the post of the Society's treasurer, believing that at the next reelection, he would "disappear from the scene" altogether.

The American Aeroarctic group ceased operations in 1933, having existed for only about five years...

Dr. Rudolf Breitfuß
BERLIN-SCHÖNEBERG
Stöckmannstr. 1, 14
Tel. Stöckmann 6887.

ПРОЕКТ КАПИТАНА БРУНСА.

ТРАНС-АРКТИЧЕСКОГО ВОЗДУХОПЛАВАНИЯ ИЗ ЕВРОПЫ В СТРАНЫ,
ЛЕЖАЩИЕ К ЮГУ ОТ БЕРИНГОВА ПРОЛИВА, А ТАКЖЕ ОРГА-
НИЗАЦИИ С ПОМОЩЬЮ ВОЗДУШНОГО КОРАБЛЯ ГИДРО-МЕТЕОРО-
ЛОГИЧЕСКОЙ СЛУЖБЫ В СЕВЕРНОЙ РОССИИ И СИБИРИ.

1. ВСТУПЛЕНИЕ

Составил Л. Л. БРЕЙТФУС, член германской комиссии по исследованию
полярных стран с помощью воздушного корабля.

Если мы бросим взгляд на глобус, мы увидим, что Россия является одной из самых полярных стран мира: ее главный фасад, омываемый водами Ледовитого океана, выходит прямо на север и стосотыдесят градусов полярного круга сплошь проходят по ее территории, откуда величайшие в мире реки несут свои теплые воды в Ледовитый океан. Этим самым как-бы предопределяется зависимость богатых, естественными произведениями внутренних областей Северной России от Ледовитого океана, покорением которого, т.е. познанием его природы только и может быть достигнут успешный и дешевый сбыт этих богатств в бассейнах Атлантического и Тихого океанов.

Начало стремлений познать северные области и их природу и тем самым использовать северный морской путь и приблизить сибирскую тайгу к культурным центрам Европы и Америки, теряется во мраке полумифической древности; с реальными же личностями мы встречаемся только в середине IX века в лице Нормана Оттара, смелые плаванья которого распространялись от берегов Норвегии до глубоких пределов

At the finish line

The Arctic expedition aboard the airship LZ-127, planned for 1929, never took place. The flight was rescheduled for 1930, but Nansen died that year.

In 1929, members of the International Aeroarctic Society gathered in Berlin for their Third Conference. By this time, the USSR Academy of Sciences, although it still remained the country's highest scientific authority, had already lost its independence. Soviet scientists were invited to participate in the conference, but they could not obtain permission to travel. Nevertheless, the Soviet Aeroarctic group continued to exist for several more years.

In 1931, the LZ-127 finally made a successful flight over the Arctic. The expedition was led by Eckener, who had taken Nansen's place. The expedition members came from Germany, the Soviet Union, the United States, and Sweden. Our country was represented by geographer R. L. Samoilovich, meteorologist P. A. Molchanov, engineer F. F. Assberg, and radio operator E. A. Krenkel.

A page from Bruns' project, submitted for consideration to the Polar Commission of the USSR Academy of Sciences, with Breitfuß' personal stamp. SPB RASA. Archive Ref.: Coll. 75. Polar Commission / Inv. 1 / Doc. 95 / Pg. 7

In 1929, the second issue of *Arctis* published the lists of the Aeroarctic Presidium and members of the Soviet Aeroarctic group.

The multinational presidium included: F. Nansen (Norway), President; G. Wegener (Germany), Chief of Administration; Vice-Presidents: L. A. Bauer (USA), E. Delcambre (France), J. de Elola (Spain), A. E. Fersman (USSR), U. Nobile (Italy), and N. Shaw (England); W. Bruns (Germany), Secretary General; A. Berson (Germany), Deputy Secretary General; W. Bleistein (Germany), Treasurer; G. Maurer (Germany); H. Arctowski (Poland); H. Backlund (Sweden); F. M. Exner (Austria); Hosokawa (Japan); B. L. Isachenko (USSR); E. Laimins (Latvia); R. L. Samoilovich (USSR); and others.

In 1929, the Soviet Aeroarctic group was quite impressive, bringing together many outstanding Soviet scientists and specialists in a wide range of fields: the renowned geologist and mineralogist A. E. Fersman; polar explorer and oceanographer V. Yu. Wiese; prominent Soviet geodesist, gravimetrist, and hydrographer V. V. Akhmatov; microbiologist and botanist B. L. Isachenko; the polar explorer and geographer R. L. Samoilovich; and others. The Polar Geography Cabinet of Leningrad State University also joined the Soviet Aeroarctic group as a collective member

A page from Bruns' project, submitted for consideration to the Polar Commission of the USSR Academy of Sciences, with Breitfuß' personal stamp. SPB RASA. Archive Ref.: Coll. 75. Polar Commission / Inv. 1 / Doc. 95 / Pg. 7 rev.

On July 26–30, 1931, the airship flew over most of the Soviet Arctic for scientific (and, unofficially, reconnaissance) purposes. The team conducted detailed aerial photography from the airship as well as aerometeorological studies in various layers of the atmosphere, including the upper ones. The altitude of the radiosondes that Molchanov used in his experiments reached 17,000 meters, largely exceeding the results obtained by the renowned German aerologist Prof. Hugo Hergesell.

The 1931 expedition is extensively covered in literature, so we will not tell its story here. We will only raise one question: Why did the Soviet government ultimately permit a flight over the country's northern territory? The answer, we believe, lies in the fact that in 1930, an expedition led by geographer Georgy A. Ushakov had already launched its operations on Severnaya Zemlya; thus, Russian scientists retained their research priority, long defended by members of the Polar Commission of the Academy of Sciences.

The international society for Arctic exploration was finally able to fulfill its goal, set already by Breitfuß, i.e., to fly an airship over Emperor Nicholas II Land, by that time called Severnaya Zemlya.

This story weaves together the lives of different people, who happened to be part of amazing events, the most astonishing one being, perhaps, that

Белого моря.

После этих плаваний, носивших скорее характер разбойничьих набегов, нежели географических изысканий, мы лишь по прошествии шести веков, т.е. уже вслед за эпохой великих морских открытий снова встречаемся с отважными моряками, взоры которых устремлены на Северный Ледовитый океан. На этот раз плаванья побуждаются не только уже стремлением познать неизвестные полярные края, но главным образом надеждою за льдами, окружающими северный полюс, встретить незамерзаемое море, которым возможно пройти прямо в Китай и Индию ...

Не смотря на свою парадоксальность, идея эта, подобно многим другим оригинальным идеям периода схоластики и алхимии, ныне начинает оправдываться и даже близка к осуществлению благодаря чрезвычайно быстрому прогрессу техники и научных знаний, особенно же изобретению и усовершенствованию двигателей внутреннего сгорания, положившему начало целой новой отрасли сообщений — авиации и аэронавтике — и тем самым открывшему новую эру в истории культуры человечества.

В виду того, что для воздушных кораблей и самолетов не существует препятствий ни со стороны открытых морей, ни полярных льдов, ни топких болот, и лишь высокие горные хребты являются главным образом для кораблей некоторыми препятствиями, они могут прокладывать свои воздушные курсы по линиям большого круга, т.е. по кратчайшим расстояниям между двумя точками, северные полярные области приобретают ныне уже не полумифическое значение стран, скрывающихся от нас Китай и Индия, но становятся реальным ближайшим путем между Западом и Востоком, между Европой и странами за Беринговым проливом! Действительно, расстояние между Гамбургом и Номом

only a decade had passed from the German airship commander Bruns' first speeches on commercial trans-Arctic airship routes to an actual large-scale exploration flight involving representatives from four countries! Even by today's standards, this is quite a short time, so it is easy to see what great effort those inspired by this bold idea had to make for this unique air expedition to become a reality.

The three international congresses of the Aeroarctic Society became important milestones in the history of Arctic research, as they not only summarized the expedition results and analyzed observational data from previous decades but also outlined the main areas for future polar exploration. Although the hopes for aerial exploration of the northern polar regions were yet far from coming true, the efforts of the Aeroarctic gave new impetus to Soviet and international Arctic research.

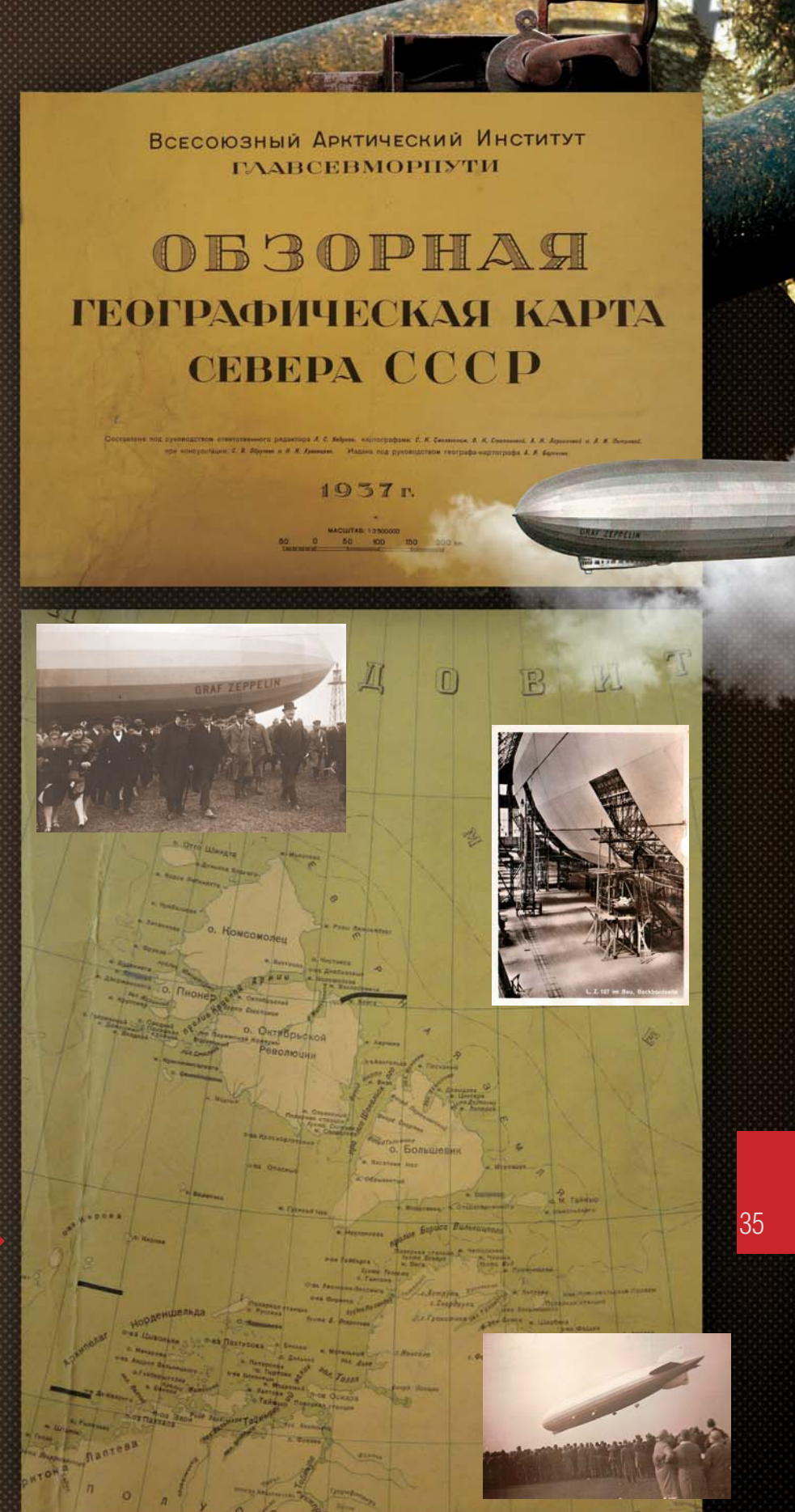
The Soviet press of the 1920s and 1930s contains numerous publications devoted to the activities of the Aeroarctic Society and the daring project of a trans-Arctic airship flight. However, only one article among this multitude appears to be directly linked to the name of the Russian–German scientist and Arctic explorer Breitfuß. *Priroda* (1924, N 7–12), one of the oldest Russian journals, published a long article titled “Captain Bruns’ project for trans-Arctic aeronautics from Europe to countries south of the Bering Strait and organization of an airship-based hydrometeorological service in northern Russia and Siberia.” The text of this article largely repeats that of the project submitted by Breitfuß to the Polar Commission.

The numerous articles in the Soviet periodicals of that time tend to concentrate on Bruns: his travels across the Soviet Union, his meetings with specialists and Soviet officials, and his search for a site for an airship mooring mast. These publications paint a clear picture — it was the airship pilot Bruns who had conceived the project that Breitfuß wrote about. If you read these documents alone, you would not understand what a great role Breitfuß played in refining and promoting the project as well as creating an organizational framework for it, i.e., the International Society for the Exploration of the Arctic Regions by Means of the Airship (Aeroarctic). After all, as we now know, Bruns’ idea was

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Overview geographic map of the North of the Soviet Union. All-Union Arctic Institute, 1937.

Below is a fragment depicting the Severnaya Zemlya archipelago, explored and mapped by members of the 1930–1932 expedition led by Georgy A. Ushakov



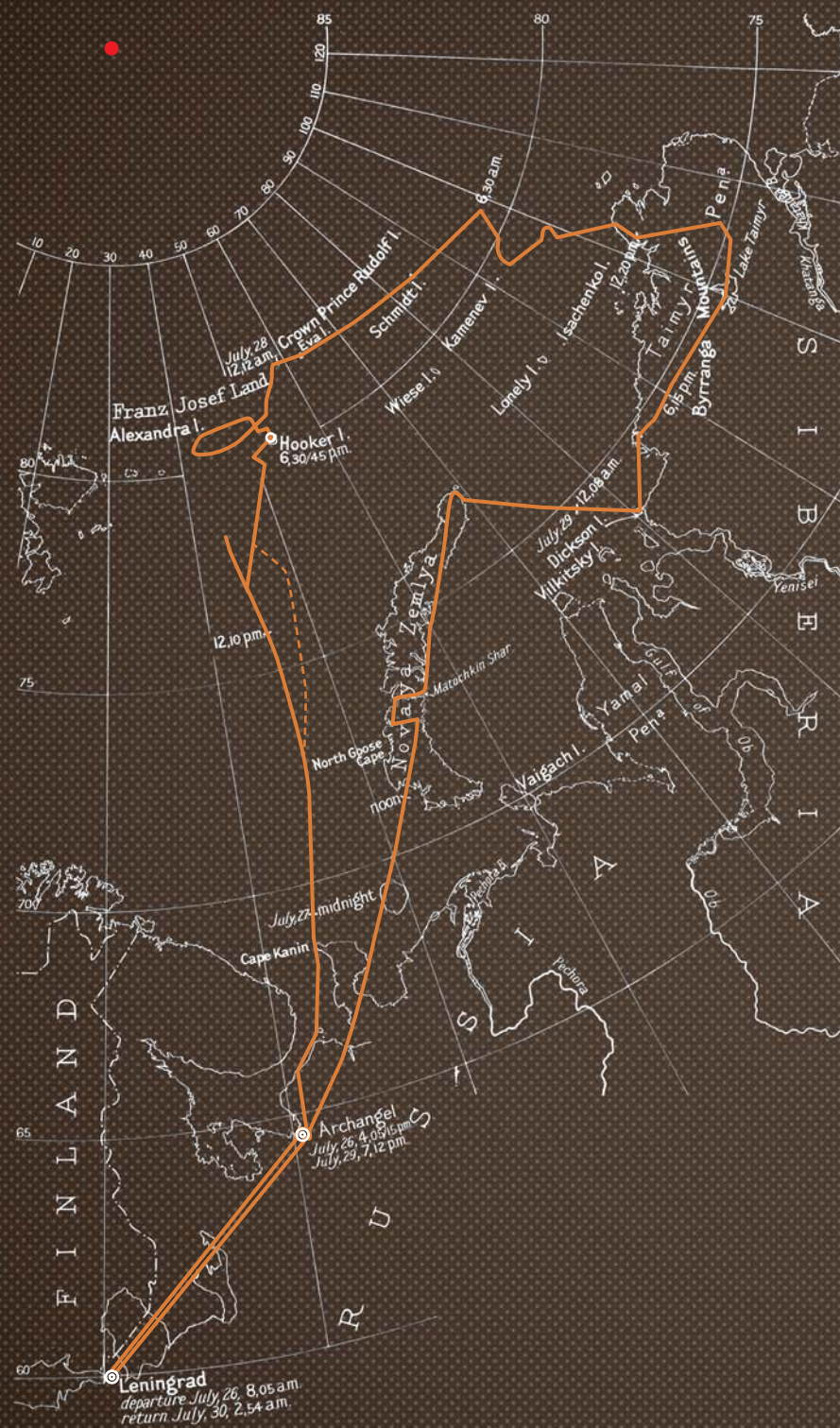
Layout and photo of the interior of the LZ127 airship gondola. <http://www.airships.net>



simpler and, one might say, more modest. It was only about organizing long-distance commercial airship routes, which would reduce travel time for passengers, cargo, and mail. Breitfuß put forward a project that was scientific rather than commercial. He proposed to conduct airship-based research of the Arctic, which, he believed, would enable large-scale development of transportation in high latitudes, which, in turn, would greatly transform life in the north of Siberia.

The true meaning of this story, in which both scientific ties and long-standing friendships played a great role, was largely revealed by the discovery of the original text of the project, bearing Breitfuß' personal stamp. This document, found in the collection of the Polar Commission of the Academy of Sciences at St. Petersburg Branch of the RAS Archives, helped connect the dots between numerous disparate facts and uncover unknown chapters in the history of polar exploration. Judging by the inscription on the first page, the document was given to A. I. Tolmachev, an active member and academic secretary of the Polar Commission. This position was previously held by his father, I. P. Tolmachev (Tolmachoff), one of Breitfuß' closest friends and colleagues.

The document was apparently submitted to initiate discussion at a meeting of the Polar Commission, in a circle of scientists and specialists who would appreciate the new, ambitious ideas that Breitfuß added to Bruns' project, i.e., the ideas related to the study of Siberia and the Polar Commission's long-planned project to explore Emperor Nicholas II Land (Severnaya Zemlya). It appears that Breitfuß, fully aware of all the objective difficulties that had prevented this research in previous years, offered his former Russian colleagues a new opportunity to implement their scientific plans.



Flight map of the Graf Zeppelin in 1931

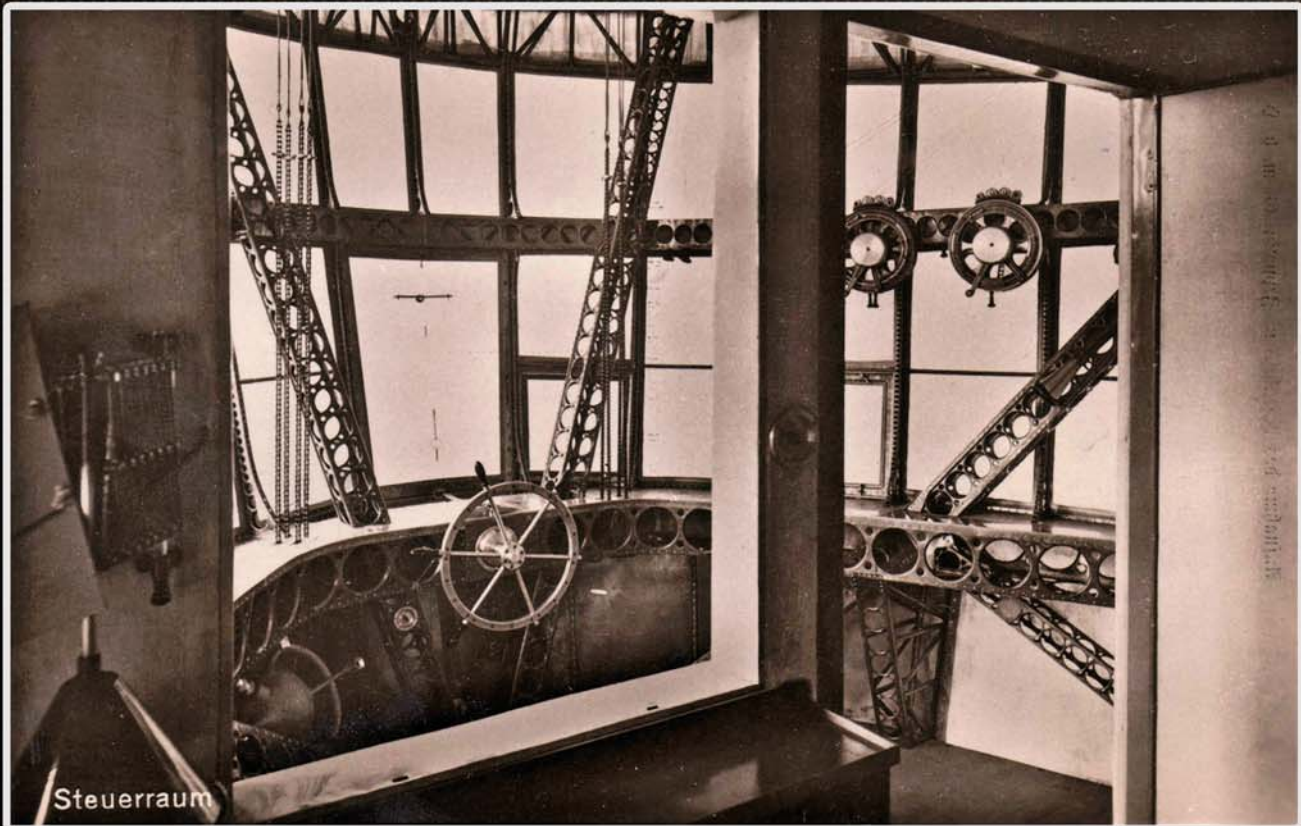
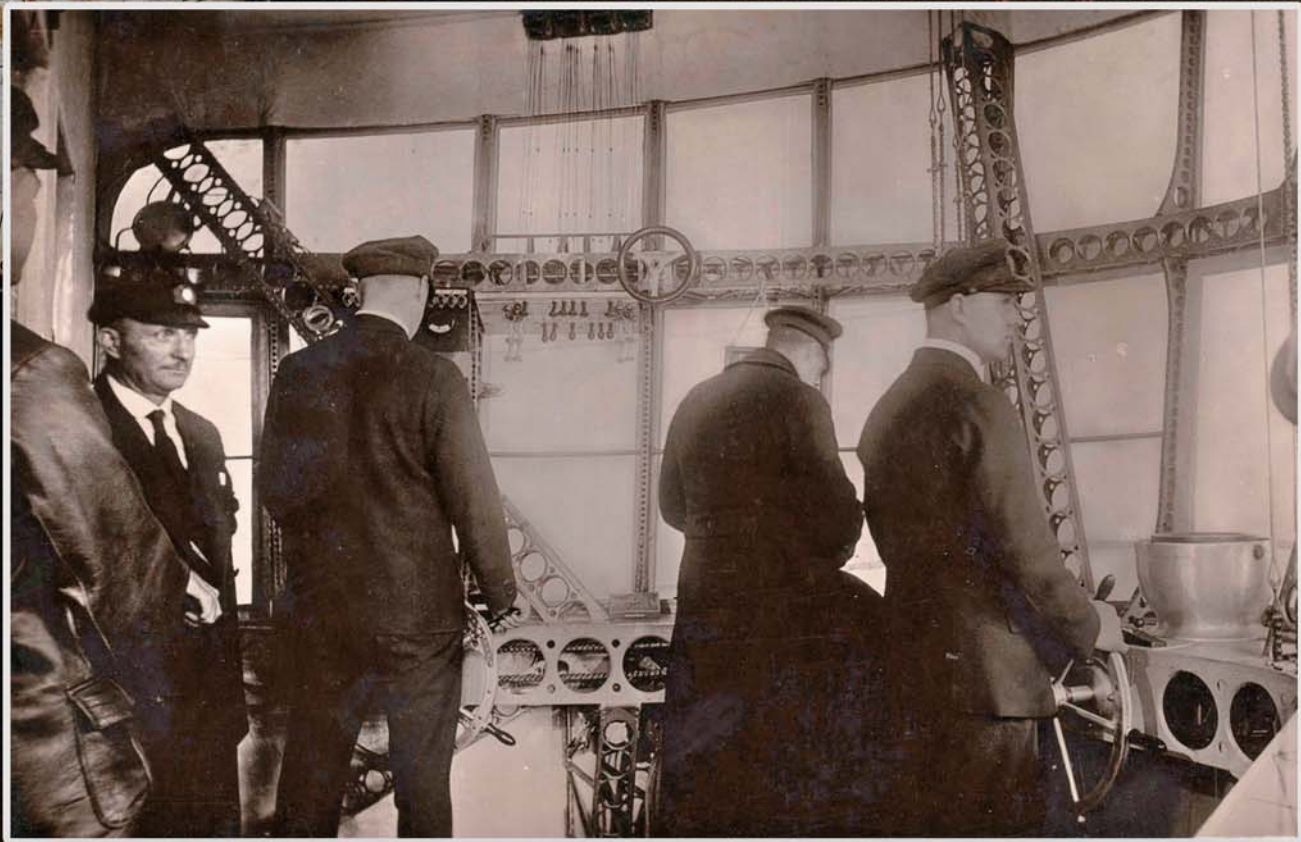


Воздушный визитъ въ Москву

На дняхъ, германскій дирижабль «Графъ Цеппелинъ» нанесъ Москвѣ «дружескій визитъ» — что не помѣшало красноармейцамъ обстрѣлывать его при перелетѣ черезъ границу...

На нашей фотографіи — красноармейцы, помогающіе службѣ воздушнаго корабля. Въ медальонѣ внизу — командиръ «Графа Цеппелина», кап. Эккертъ, окруженный высшими членами красной арміи.

Cover of the magazine *Illyustrirovannaya Rossiya* ('Russia Illustrated'). 1930. N 40 (281)



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Photo of the interior of the LZ127 airship gondola from the website <http://www.airships.net>

