

FROM AIRSHIPS TO AIRBUS



THE HISTORY OF CIVIL AND COMMERCIAL AVIATION

Volume 2 ☆ Pioneers and Operations

**EDITED BY
WILLIAM F. TRIMBLE**

FROM AIRSHIPS TO AIRBUS

Volume 2

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Epilogue by W. David Lewis

Describing the importance of key airline pioneers and the links between commercial air carriers and the military, this volume of *From Airships to Airbus* focuses on the economic, political, and social bases of civil and commercial aviation in the United States and other countries during the early twentieth century.

The contributors examine case studies from several different countries, while stressing the common need for political, economic, and social support for the early development of commercial aviation. One essay shows how in Lucerne, Switzerland, groups of civic-minded promoters brought in the first airships and airplanes as a means of stimulating tourism; another describes how Franco-Roumaine—the world's first transcontinental airline, flying across Europe from Paris to Istanbul—depended on a complex web of international agreements and support facilities. Several essays examine the close connections between military and commercial aviation in Russia, Sweden, Germany, and Japan, respectively. The book demonstrates the

importance of such pioneering individuals as U.S. Postmaster General Walter Folger Brown, who brought a progressive vision to governmental support of the nation's airlines in the early 1930s; Albert Plesman, who made Holland's KLM one of the world's premier airlines; and Edgar Johnston, who used government regulation in Australia to promote aviation in a continent that had virtually no other transportation system.

The essays were originally prepared for the International Conference on the History of Civil and Commercial Aviation, held in August 1992 at the Swiss Transport Museum in Lucerne. The first volume of *From Airships to Airbus*, focusing on infrastructure and environment, is also available.

About the Editor

William F. Trimble, associate professor in the Department of History at Auburn University, is the author of many books, including *Admiral William A. Moffett: Architect of Naval Aviation* (Smithsonian Institution Press, 1993).



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On the cover: With a DC-3 looming in the background, a Cadillac limousine picks up passengers for transfer to connecting flights or to provide service to the terminal at New York's La Guardia Airport. (Courtesy of American Airlines; 2083 B)

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***THE HISTORY OF CIVIL
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The First Transcontinental Airline

Franco-Roumaine, 1920–1925

This chapter deals with the Compagnie Franco-Roumaine de Navigation Aérienne (CFRNA), known more commonly by its abbreviated name, Franco-Roumaine. Created in April 1920, the airline remained in operation until January 1, 1925. Tracing the history of this important French company, which opened the first transcontinental air route in Europe and the world, makes an interesting case study of the creation and development of early European air carriers. This exposition will deal with the general and specific characteristics of Franco-Roumaine, notably how technical, economic, political, and legal factors affected the company and its achievements. This is not meant to be an extended analytical treatment of the company and its history; rather it is intended only as a brief factual survey.

The opening of an air route following World War I reflected the prevailing attitude of sporty achievement and risk-taking that characterized the beginning of aviation. The level of technology in the early 1920s was such that it was almost impossible to establish an air transport operation as a profitable activity. Franco-Roumaine overcame this problem by making subsidy agreements with the French government and the different countries it planned to serve. From the beginning, Franco-Roumaine distinguished itself from other early carriers by

(1) A substantial amount of capital, a large portion of which was of foreign origin. This gave the company operating reserves and gave it a multinational character. In some ways, Franco-Roumaine can be thought of as one of the world's first multinational companies. (2) The acquisition of the best equipment, in which quality was the only consideration. Frequently, early air carriers obtained their equipment from their own airplane factories, and their airplanes did not always meet the highest standards. Such was not the case with Franco-Roumaine. (3) The introduction of the world's first scheduled night flights. (4) Ensuring that countries served by Franco-Roumaine were active participants in the company by using native technicians and local facilities.

At the same time, Franco-Roumaine, like other airlines, was dependent on the development of aeronautical technology (airplanes, engines, navigation and communication instruments, ground installations, runway lights, and so forth), on the economic situation facing the aeronautical industry following the war, on political decisions, and on changing national and international airline and aviation legislation.

At the end of World War I, the former belligerent countries possessed not only an important air industry, but also large numbers of surplus airplanes suitable for future conversion to commercial air transportation. The opening of the first airlines and the organization of the first national and international companies dates from this period.

France was actively involved in the nascent industry. She was the first to try to put into action an effective aeronautical policy oriented toward boosting the development of commercial aviation. The key early figure was Pierre-Etienne Flandin, who, while assistant secretary of state for aeronautics from January 1920 to February 1921, initiated a policy of aviation development that was oriented as much to commercial aviation as it was to the military. Flowing from his office was a steady stream of public orders and technical decisions that affected commercial and military aviation. By carefully managing credit arrangements, he laid the foundation for the postwar rebirth of markets and firms. In addition, Flandin initiated the liquidation of aircraft manufacturing stocks, extended his authority to the army, and subsidized manufacturing companies that were developing new aircraft especially adapted for commercial transport. Flandin also played an important part in drawing up the *Convention Internationale de la Navigation Aérienne* (CINA).

To get an idea of the French aeronautical industry's situation and the level of subsidy, one should note that the purchasing credit of the industry went from 160 million francs in 1921 to 300 million francs in 1925, while subsidies increased from 28 million francs in 1921 to 48 million francs in 1925. Numerous

prototypes of commercial transport aircraft appeared between 1920 and 1923, and orders for mass production came afterward (more than 3,000 airplanes and engines were delivered from 1921 to 1923).

France viewed aviation as an important part of economic development and a means of extending its political and diplomatic influence in the new postwar world. National policy considered it imperative to support such new countries as Poland, Czechoslovakia, and Romania, created after the dismemberment of Austria-Hungary and now menaced by Soviet Bolshevism.

Against this background, Franco-Roumaine, the eighth airline company in France, was created through the initiative of the Romanian minister of foreign affairs, Nicolas Titulescu, who presented the idea at the Trianon Peace Conference on June 4, 1920, the signing of the peace treaty with Romania. Most notably, Titulescu affirmed that aviation, which was an instrument of war, ought to transform itself into an instrument of peace and become a new and highly profitable means of transportation and communication.

The idea coalesced as the result of the work of the director of the Romanian Banque Marmorosh, Aristide Blank, who accompanied Titulescu to the peace conference, and a young French lieutenant, Pierre de Fleurieu, who, after serving in aviation during the war, was demobilized and hired by Banque Marmorosh's Parisian subsidiary. At the end of 1919, Fleurieu received an assignment from Blank to study the possibility of creating an airline linking Paris and Bucharest. This route had considerable political interest because it would help connect France to Romania and to the countries of the Petite Entente. Therefore, the diplomatic and military dimensions were as important as the economic possibilities of such an airline.

Aristide Blank committed himself to the project as it was set forth in March 1920 by providing 2.5 million francs. At the same time, Flandin, as assistant secretary of state for aeronautics, promised to have subsidies cover the line's deficit (thereby following traditional policy). As an interim measure, he facilitated the acquisition of airplanes from the army for starting the service while arrangements were made for the delivery of aircraft better adapted for passenger transport.

The Compagnie Franco-Roumaine de Navigation Aérienne was chartered on April 23, 1920. Fleurieu was the director-general of the company; General Maurice Duval (former chief of military aeronautics) was president of the administrative council; Paul Hermant became the commercial director; and Albert Deullin was the chief pilot. The first survey flight, which provided experimental verification of the project, took place that same month with a Potez 7 piloted by Deullin. Fleurieu accompanied him as a passenger.

The inaugural route was to be Paris-Strasbourg-Prague-Warsaw. Negotiations opened in Prague for the acquisition of landing rights, the organization of local administrative services and airplane maintenance and repair, and establishing the legal formalities covering the entry and exit of air cargo. These negotiations resulted in a 10-year monopoly granted by the Czech government and an annual subsidy of five million crowns. Poland granted ground installations and a subsidy in the form of supplying free fuel equal to an annual sum of one million francs. The French government had an additional stake in the new line, because it wanted official mail to reach Prague and Warsaw without running the risk of its being intercepted and read by German dispatchers.

On September 20, the Paris-Strasbourg stretch was officially opened. Flights were on a daily basis; the time of departure was 2:30 P.M.; and the price for a round-trip ticket was 2,400 francs. On October 4, the Strasbourg-Prague route was inaugurated with three flights weekly, followed later by daily departures. Because of generally poor winter weather conditions, flights were to be reduced in November and suspended in December.

In 1920, Franco-Roumaine transported 70 passengers, more than 500 kilograms of freight, and 70 kilograms of mail. Although the volume was low, the line's viability was sufficiently demonstrated.

At the end of November, the company had acquired 31 airplanes (out of 185 in the French airline fleet). The first airplanes were Salmson 2A2s equipped with 260-horsepower nine-cylinder Salmson Caton-Unne Z 9 engines. They had a cruising speed of 130 kilometers per hour at 2,000 meters altitude. The airplane carried 258 kilograms of cargo and had a maximum flying time of three hours. The Potez 7 airplanes were ready for service in July. They were equipped with twelve-cylinder V-type Lorraine-Dietrich 12 Da engines producing 370 horsepower and had a cruising speed of 180 kilometers per hour, a range of 500 kilometers, and a cargo capacity of 330 kilograms. The Potez was a much more comfortable airplane than the Salmson, which continued to serve the less-traveled Strasbourg-Prague leg of the route. About half the airplanes were converted from military specifications. Franco-Roumaine recruited 15 pilots between May and November 1920. Until January 1, 1921, the military aviator's certificate was still recognized, and the pilots did not have to obtain special commercial licenses.

The company's financial situation at this time was poor. It survived only by subsidies and grants from the state. These handouts to support airline companies were divided into those covering wear and upkeep (the value of aircraft depreciated and maintenance costs increased after 200 hours of flight), equipment (a function of distance traveled and the power of the engine), transport (a function of cargo and speed at 2,000 meters altitude), and the military (the com-

pany recognized that it might have to provide airlift for the army). In 1920, Franco-Roumaine's income was 366,000 francs, of which 347,800 francs were subsidies. The company's debt ran at about 30 percent of its total assets.

The company's financial position improved in January of the following year. On the eleventh, for instance, grants earmarked for the acquisition of new aircraft were modified, and changes were made to certain subsidies, making them retroactive. In addition, the government provided grants for flying over foreign territories. Also in January, the airline hoped to attract additional clientele by setting new, reduced fares: 150 francs from Paris to Strasbourg, 500 francs from Paris to Prague, and 800 francs from Paris to Warsaw. In February, largely as a result of the Franco-Polish treaty of alliance, signed on January 19, the airline opened its Prague-Warsaw line with flights three times weekly. In July, the airline added daily flights to Warsaw. September marked the highest number of kilometers flown (92,800), but that same month the airline suffered its first fatal accident.

Franco-Roumaine also acquired new airplanes, notably the Blériot Spad 33, the Potez 9, and the Blériot Spad 46. The latter two used the same engine, a 370-horsepower Lorraine-Dietrich. In July, the total number of aircraft in the inventory came to 47. These airplanes were expensive, costing from 100,000 to 130,000 francs each, and thus placed a further financial burden on the company. The shareholders covered this with commitments totaling 8,250,000 francs, which brought the company's capitalization to more than 10 million francs. During the year, the company organized maintenance and repair operations at the Paris-Le Bourget, Strasbourg, Prague, and Warsaw airports. Because it was set up to handle the fitting of different types of motors to different airframes, the shop at Le Bourget was particularly important. From both an operational and a financial point of view, Franco-Roumaine became a sounder company in 1921.

Attempts at opening a new leg to Bucharest were another important development in 1921. Despite German competition, agreements were negotiated with Austria (valid for 10 years) and Hungary (valid for 20 years). These understandings provided for a working monopoly and an obligation for these countries to furnish ground installations. Romania, which had already awarded Franco-Roumaine a 20-year concession, also committed itself to planning and maintaining airports and establishing air navigation aids throughout the country. One of the highlights of the year was a flight from Paris to Constantinople by Deullin in a Spad 46 and De Marnier in a Potez 9. During the stopover in Bucharest, an enthusiastic crowd met the two pilots. The level of interest was such that King Ferdinand held an official reception for the aviators on their return flight.

In December, Franco-Roumaine suspended flight operations for the year.

The company at that point had 71 airplanes and 21 pilots. It had flown 607,433 kilometers and transported 2,136 passengers, 43,932 kilograms of air freight, and 2,039 kilograms of mail. For the year, Franco-Roumaine, which theoretically was able to transport 212,601 ton-kilometers, actually carried only 122,463 ton-kilometers, thereby resulting in a meager commercial yield of .57. The company's principal competition was the railroads, rather than foreign airlines.

A by-product of Franco-Roumaine's operations was the creation of a successful commercial aircraft market in eastern Europe. For example, the Czech Skoda works and the Industria Aeronautica Romana (IAR) factories of Brasov, Romania, acquired licenses to manufacture Lorraine-Dietrich engines. These arrangements effectively thwarted British, German, and Italian efforts to establish aviation footholds in these countries and led to a peculiar mission for Franco-Roumaine. The company now represented the interests of the French aviation industry outside France. Fleurieu understood the material and political responsibilities of this situation and created an organization (which still exists today) named the Office General de l'Air to represent of the French aeronautical industry abroad.

The flights resumed in February 1922. On April 14 of that year, Fleurieu signed an agreement regarding the airline's service from Paris to Warsaw. It superseded the previous operating agreement and introduced a new set of requirements. The pact also fixed the minimum number of aircraft in the Franco-Roumaine fleet at 63. But 1922 was, above all, characterized by the establishment of the Constantinople leg of the airline's route structure. The Prague-Vienna-Budapest line opened on May 1, the Budapest-Arad-Bucharest leg on September 15, and the Bucharest-Constantinople route on October 3. Pilot Claude Beauregard in a Spad 46 opened the section to Bucharest, and Louis Guidon carried through with the extension of the route to Constantinople. The entire transcontinental route covered 3,150 kilometers, and four new airports were opened. The Paris, Prague, and Bucharest workshops were equipped and organized for carrying out major overhauls of airplanes and engines. Camille Lepianquais, a mining engineer working for the Spad company, studied and executed the opening of the Bucharest-Constantinople line and organized the Bucharest-Baneasa repair shops.

But the line to Constantinople remained unprofitable, with a low capacity margin and commercial yield of only .27. On the Prague-Warsaw leg, the statistics for 1922 show that Franco-Roumaine aircraft covered 673,000 kilometers and carried 942 passengers, 32,000 kilograms of cargo, and 2,300 kilograms of mail. From May to December, aircraft on the Prague-Constantinople connection flew 163,000 kilometers and carried 232 passengers, 11,700 kilograms of

cargo, and 700 kilograms of mail. By the end of the year, Franco-Roumaine had 84 airplanes and 139 engines, and it employed 25 pilots.

For Franco-Roumaine, 1922 was also characterized by numerous failures, adding to the firm's chronic deficit. Financial losses were symptomatic of all airline companies at the time, but Franco-Roumaine's were especially acute because the French government had as much prestige at stake in the firm as it had money. One should also stress the irregular passenger demand on the new routes and the relative lack of air cargo. The used capacity margin or commercial yield on the Bucharest-Constantinople leg was half that of the Paris-Prague line.

The company underwent additional changes in 1923. Despite losses and excess capacity, Franco-Roumaine added a new route from Budapest to Bucharest via Belgrade. There was also a shift in corporate personnel. On May 29, Albert Deullin died and was replaced by Maurice Nogues as chief pilot. On September 20, Jules Bétrand replaced Pierre de Fleurieu as director-general. The company's administrative council brought in new members, as well. Nogues introduced night flights starting with the Paris-Strasbourg connection (trial flight on July 27-28) and then the Bucharest-Belgrade run, which he flew with Guidon on September 20. These night flights involved the acquisition of new airplanes, notably the Caudron C 61, a trimotor equipped with radio and night-flying instruments. The Caudron carried seven passengers and 220 kilograms of baggage, and flew at 166 kilometers per hour. The engines were 180-horsepower Hispano-Suizas. Some Spad 56s were also tried out on night flights. They were equipped with nine-cylinder air-cooled Gnome et Rhone Jupiter engines. The airplanes were paid for in large part by state subsidies. On any flight beyond 200 kilometers, the airline was required to have its aircraft carry navigators.

Night flights brought additional demands. Barbier-Bernard-type acetylene beacons were used for airport runway and en route navigation lights. The construction of nighttime emergency landing strips was necessary. Night flights also involved a change in schedule to make possible a combination train and air connection. Bucharest could be reached from Paris in one day by first taking the night train to Strasbourg and then flying on to Bucharest.

Backing this up was a major technical organization. The airline's principal shops in Paris-Le Bourget, Prague, and Bucharest-Baneasa were set up for major maintenance and repairs of airplanes, engines, flight instruments, electrical and radio equipment; and for the assembly of the most complex aircraft components, such as fuselages, wings, empennage, and landing gear. In 1925, the Le Bourget repair shop, which had not undergone appreciable modifications in two years, occupied an area of 600 square meters and employed 180 people.

The year 1923 also marked the beginning of competition for Franco-Roumaine on the Vienna-Budapest route by a German company, Trans-Europa

Union. Germany changed its aviation policy in other ways, too, creating great difficulty for Franco-Roumaine. For example, Germany confiscated aircraft that, because of breakdowns, had to land in Germany. During the year the airline recorded six fatal accidents.

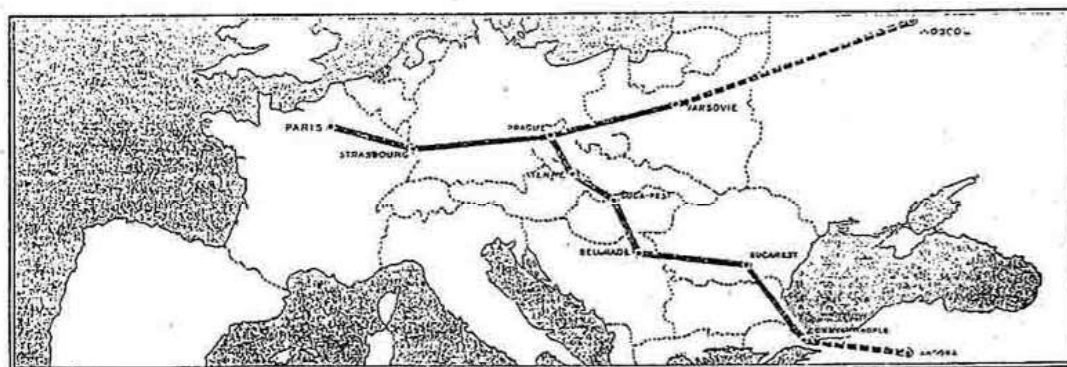
The airline's fleet and personnel stayed at about the same level, employing 22 pilots and having 80 airplanes, of which 8 were Salmsons, 5 Potez 7s, 12 Potez 9s, 14 Spad 33s, 38 Spad 46s, and 3 Caudron C 61s. In 1924, Franco-Roumaine acquired new aircraft, including additional Caudron C 61s and one Caudron C 81, a luxurious trimotor with a 400-horsepower Lorraine-Dietrich middle engine.

From 1922 to 1925, Franco-Roumaine was one of the world's most important airline companies, both in terms of numbers of passengers (12,305 in 1923) and in the size of its route network (increased to 3,717 kilometers in November 1924 with the opening of a route to Ankara, Turkey). The company terminated night flights on the Paris-Strasbourg stretch to fly from Paris to Bucharest and inaugurate flights from Paris to Moscow. Nogues made the first flight to Moscow on November 14 in a Caudron C 81. In 1924 Franco-Roumaine flew daily to Budapest (Bucharest in the summer) and Warsaw, and biweekly from Budapest to Constantinople via Bucharest.

Despite its success, Franco-Roumaine's financial situation continued to deteriorate. In 1924, 80 percent of the company's income was in the form of subsidies. These amounted to about 11.5 million francs from the French government and 2.5 million francs from other countries (Czechoslovakia, Romania, Poland, and Yugoslavia). For the 1924 financial year, the French Parliament voted against providing Franco-Roumaine with the subsidies asked for by the assistant secretary of state for aeronautics, and on January 26 a new outline of economic stipulations was drafted. On May 31, other national regulations were drawn up, aimed at reducing subsidies. On June 26, the company's stockholders held a general meeting, where they decided to enlarge the administrative council with four new administrators and change Franco-Roumaine's corporate name to CIDNA (Compagnie Internationale de Navigation Aérienne) starting on January 1, 1925. The shared capital was reduced to 8,250,000 francs; henceforth, the company was 50 percent French, 20 percent Czech, 19 percent Romanian, and 11 percent other nations.

As the heir to CFRNA, CIDNA continued to represent French diplomatic interests in eastern Europe, and it carried on with the improvement and renewal of its aircraft and ground installations and the extension of its routes.

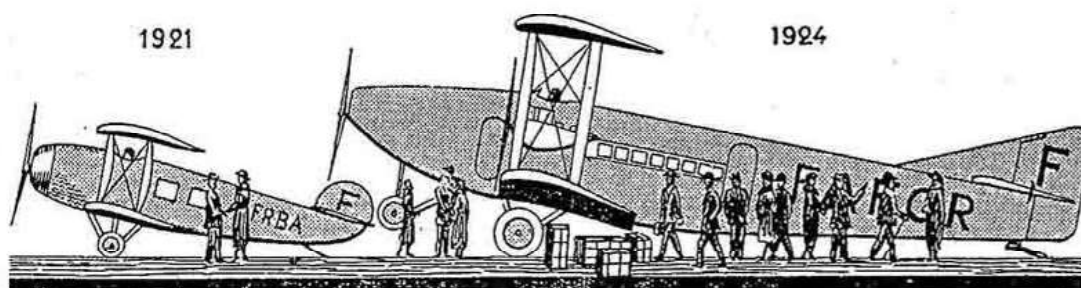
The following information about the company is an epilogue to the story of this pioneering transcontinental airline.



Bulletin de Renseignements N° 3

MARS 1924

MARS 1924



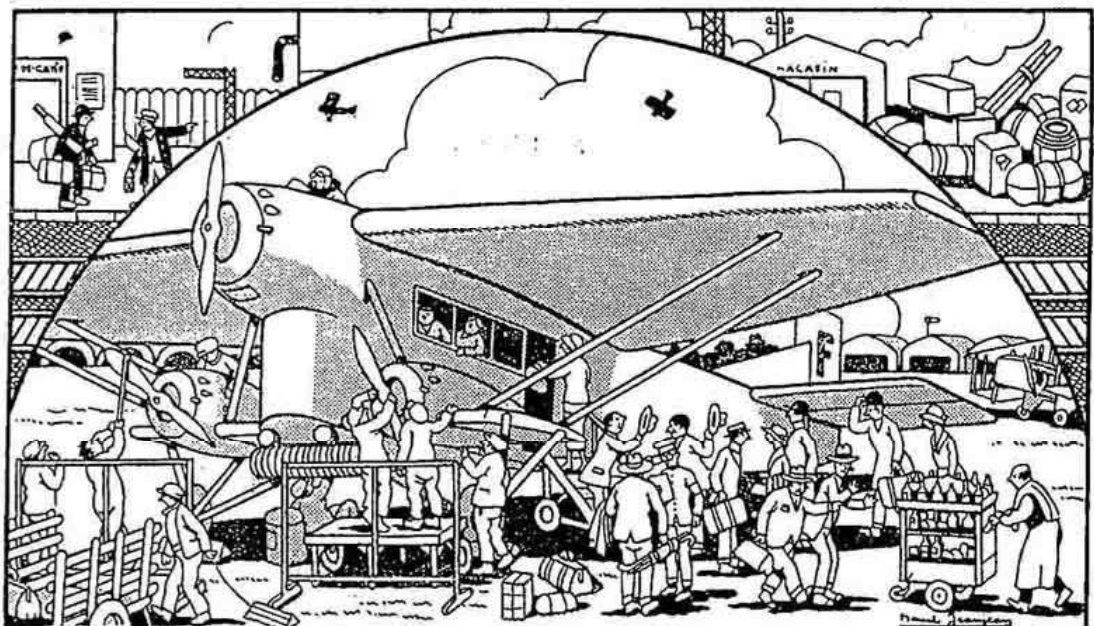
Progrès technique du matériel de la Compagnie

Avion SALMSON 1921 Modèle de guerre transformé		Avion CAUDRON C 81 1924 Aérobis commercial	
Envergure	11 ^m 75	Envergure	26 ^m 30
Longueur	8 ^m 50	Longueur	17 ^m
Surface	37 ^{m²}	Surface	145 ^{m²}
Puissance du moteur	260 Cv.	Puissance des 3 moteurs	900 Cv.
Poids enlevé	180 Kg.	Poids enlevé	1.000 Kg.
Poids total en vol	1.380 Kg.	Poids total en vol	6.370 Kg.

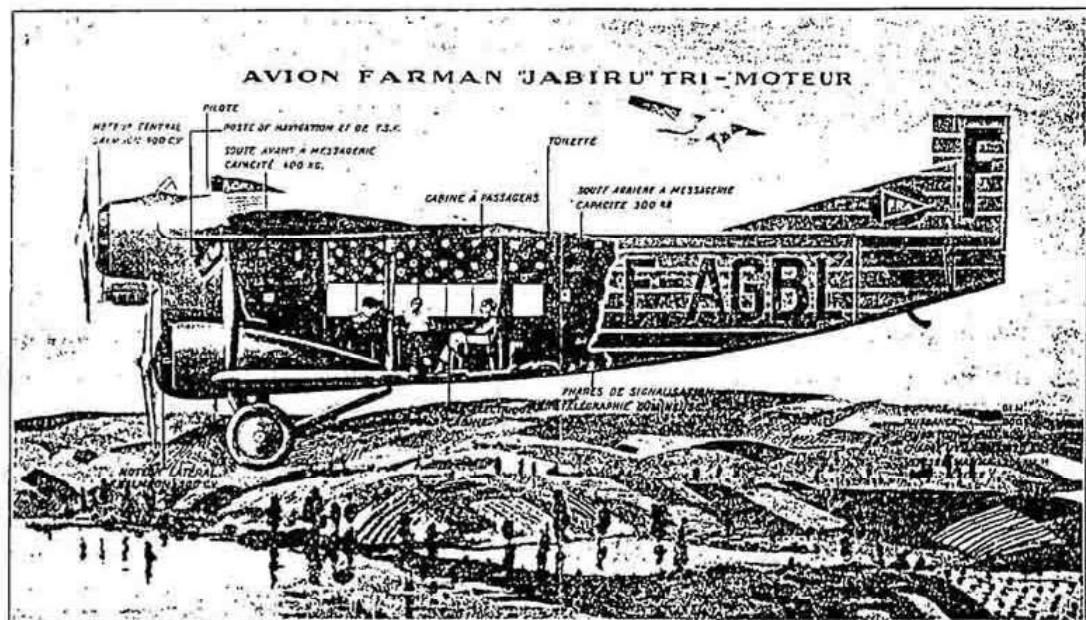
3.1. This newsletter from Franco-Roumaine, March 1924, shows the route from Paris to Constantinople and proposed extensions to Moscow and Ankara, as well as the equipment changes between 1921 and 1924.

Over the next decade the airline acquired Caudron C 61s, Caudron 92s, Spad 56s, Farman-Jabirus, Potez 32s, Fokker F VIIIs, and Fokker VIIIs. Airfields and repair shops were enlarged and modernized. The earliest and most important was the one at Le Bourget, the network's starting point, followed by those in Prague, Budapest, Bucharest, and Constantinople.

In 1931, the network consisted of the Paris-Strasbourg-Nuremberg-Prague-Vienna-Budapest-Belgrade-Bucharest line, with daily service (the Paris-

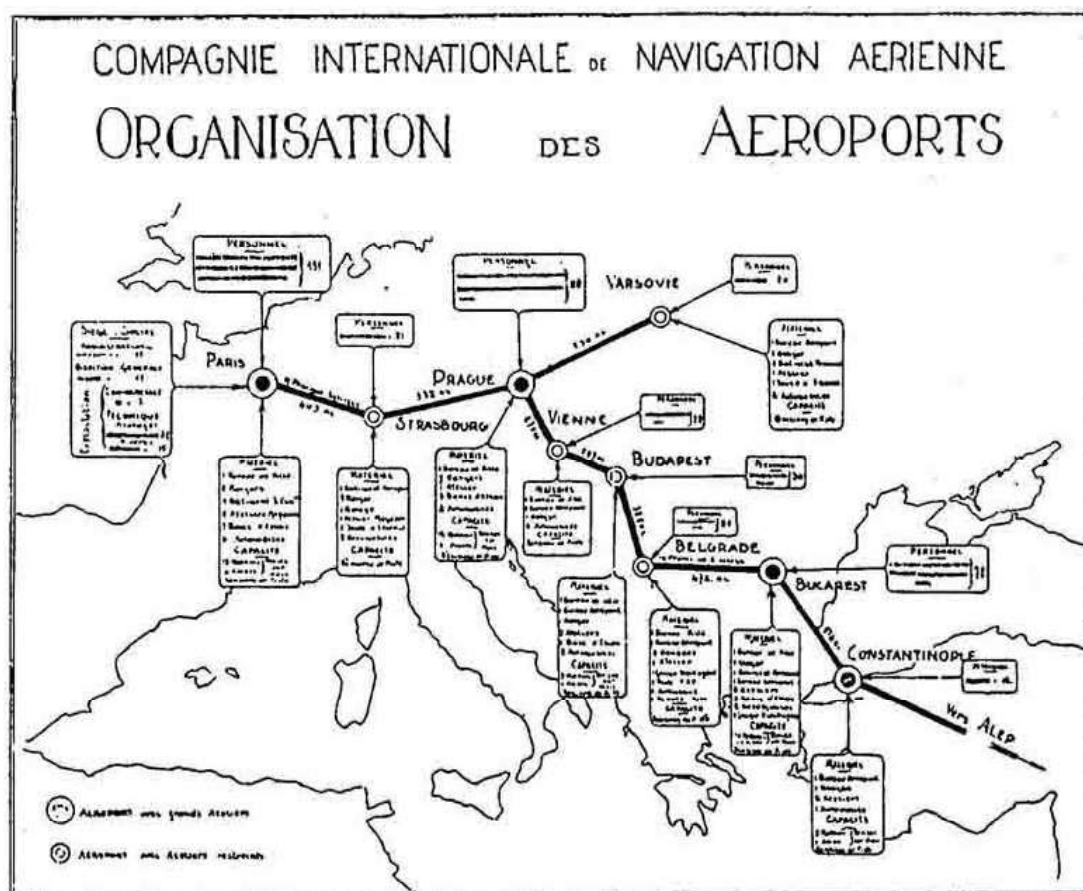


3.2. This cartoon of a Farman trimotor appeared in the Franco-Roumaine newsletter from July 1924.



COUPE SCHEMATIQUE DE L'AVION TRIMOTEUR FARMAN F. 4X
EN SERVICE SUR LA LIGNE AERIENNE PARIS-BALE-ZURICH

3.3. The company newsletter from April 1925 featured a cutaway drawing of a Farman trimotor.



3.4. The November 1925 newsletter showed the airline's routes and airports, with principal repair and maintenance depots in Paris, Prague, and Bucharest.

Strasbourg and Belgrade-Bucharest lines were flown at night); and the Prague-Breslau-Warsaw, Belgrade-Sofia-Istanbul, and Vienna-Graz-Zagreb-Belgrade routes being operated by an Austrian and Yugoslavian company, respectively.

From its formation to October 1, 1932, Franco-Roumaine's aircraft flew 18.5 million kilometers (16.5 million with passengers) and carried 105 ton-kilometers of mail and 2,890 ton-kilometers of freight.

Of the 20 companies that once existed in France, only 5—Air Union, Lignes Farman, Air Orient, Cie Generale Aeropostale, and CIDNA—remained in operation in 1932, partially as a result of the French government's policy encouraging mergers. The gloomy financial condition of these companies, financed 80 percent by the government, motivated CIDNA to reconsider the organization of air transport.

On December 11, 1932, a law regulating the aviation market was voted on. Although the law laid down the principle of competition among numbers of

airlines, the minister of air, after appealing to the five airlines to combine existing routes (and eventually merge), opted for only one national company. On May 31, 1933, CIDNA, Air Orient, Air Union, and SGTA formed SGELA (Société General pour l'Exploitation des Lignes Aériennes). From their union and the repurchasing of Aeropostale, Air France, a mixed concessionary public service company, was born on August 30, 1933.

Thus ended not only CIDNA, heir of CFRNA, but its route network as well, because Air France did not resume the Paris-Constantinople line.

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