

Argentine Civil Aircraft

Part 1

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This will be the first article published outside Argentina to treat all planes of original design manufactured in this country. Records of these aircraft have been very difficult to discover, and details of some machines are lost forever, but years of careful research have allowed the compilation, beginning here, to be made. Expressly, it does not include balloons or gliders.

To facilitate later consultation of the list, it is presented alphabetically rather than chronologically.

Aer-Fabric AF-3 "Chuschin" (Thrush) - The desire of Mr Arnaldo Berkling to build an airplane on a commercial scale materialized when the company Aer-Fabric S.R.L. was formed, although he later retired from it. During 1957, work on the first plane began in Ezeiza under his supervision, and he applied experience which he had gained with his Berkling "Misionero" (Jodel-Wassmer D-11). The designer of this aircraft was the aeronautical engineer Alberto A. Torres, and it was he who integrated the use of cedar from the province of Misiones in the design.

Static tests were carried out at the government factory of DINFIA in August 1958. They were completed satisfactorily, surpassing the normal figures for an aircraft of this type. Lamentably, financial difficulties blocked the start of production on a first series of 100 units for which a new factory was being built at San Justo. Also, an executive six-seater with two engines was designed but dropped.

The AF-3 was a three-seat touring and general purpose monoplane that was also suitable for agricultural or ambulance work. The wing was of cantilever construction with the outer portions having dihedral and the center section carrying the flaps. Power plant was a 4-cylinder, horizontally opposed Continental C-90-12F, giving 95 hp at 2625 RPM for takeoff. Dimensions were: Span of 8.20 m (26 ft 11 in), Length of 6.30 m (20 ft 8 in), Height of 2.15 m (7 ft 1 in), and Wing Area of 12.7 m² (135 sq ft). Empty weight was 368 kg (810 lbs), useful load 332 kg (734 lbs), and gross weight 700 kg (1544 lbs). Fuel capacity was 85 litres (22.5 U.S. gallons) and oil capacity was 5 litres (1.4 U.S. gallons). Maximum speed was 195 km/h (121 mph), cruising speed

170 km/h (105 mph), landing speed 50 km/h (31 mph), ceiling 5,000 m (16,400 ft) and range 700 km (440 miles).

Aero Boero 95 - This all metal three-seat light monoplane was designed by Mr Hector Boero with the close co-operation of his brother, Cesar Ernesto Boero. The two men established the company Aero Talleres Boero S.R.L. at Morteros in the province of Cordoba. The prototype first flew on March 12, 1959 and performed quite well. It had the experimental registration LV-X-20, and this was later changed to LV-CHB. Subsequently three different versions have been manufactured--the Aero Boero 95 Standard with the C-90-8F engine, the Aero Boero 95 de Lujo with 100 hp Continental O-200A engine, and the Aero Boero 95 Fumigador for agricultural duties, also with the O-200A engine plus an internal 240 litre (64 U.S. gallon) tank for spraying liquid and for dusting and spraying equipment. Some units of the Aero Boero 95 were also built in Uruguay and Peru.

At the beginning of 1962 a second version began successful flight trials. It was powered with a more powerful Lycoming 360 AIA engine rated at 180 hp and 2700 RPM at sea level. This version has been followed by design work on an "Aero Boero Turbo" five-seat twin-engined executive transport.

The Boero 95 is powered by a single 95 hp Continental C-90 4-cylinder, horizontally opposed, air-cooled engine, driving a metal, two blade, fixed-pitch Sensenich propeller with a diameter of 1.88 m (6 ft 2 in). Dimensions are: Span of 10.42 m (34 ft 2 in), Length of 6.90 m (22 ft 7½ in), Height of 2.10 m (6 ft 10 in), and Wing Area of 16.36 m² (176.1 sq ft). Empty weight is 400 kg (882 lbs), useful load 315 k (695 lbs), and gross weight 715 kg (1577 lbs). Fuel capacity is 110 litres (24 Imp gallons) and oil capacity is 4.5 litres (1.0 Imp gallons). Maximum speed is 205 km/h (127 mph), cruising speed 170 km/h (106 mph), stalling speed with flaps down 42 km/h (28 mph), service ceiling 5,200 m (17,000 ft) and range 960 km (600 miles).

Aiello No 1 - In 1930, at the age of 21, Mr Eugenio Aiello and a nephew of 17, Tomas Zuzzio, built their first aircraft in Buenos Aires. It was a very simple,



Aer-Fabric AF-3 "Chuschin"



Aero Boero 95

*Aiello No 1**Aiello No 2*

all wood machine with the peculiarity that the pilot was not in a sitting position to fly it but was standing on a platform in the Santos Dumont manner. The fabric-covered wings had variable incidence, working as ailerons in order to preserve stability on the takeoff run. At the rear, a fixed stabilizer was provided. The landing gear consisted of two motorcycle wheels in tandem to one another. Power was provided by a Harley Davidson 750 cm³ engine developing 10 hp and driving a two blade metal propeller. Span was 6,00 m (19 ft 8 3/8 in), length 2,50 m (8 ft 3 in), and total weight 80 kg (176 lbs). This little machine only flew on its maiden flight as after taking off and reaching a height of some meters it crashed. Aiello was unhurt.

Aiello No 2 - Following his first experience, Aiello designed and constructed a new "moto-aviette." This time he used a steel tube structure with wings of wood and fabric covered. The span was 7,00 m (23 ft) and the length was 2,00 m (6 ft 7 in). The landing gear was of the tricycle type, and this time the pilot was seated in the center, behind the engine. A high parasol wing with ailerons was incorporated, and along the whole wing, elevators were installed with rudders placed at the wing-tips. Like all Aiello productions, this machine had the distinctive characteristic of lacking a conventional tail unit.

The power plant was an 8 hp Douglas motorcycle engine driving a tractor propeller. The airplane was too heavy for so little power, and only a few hops were accomplished. On the last one, the machine crashed into the car that was being used to tow it into the air, but Aiello was again unhurt.

Aiello No 3 - Finally, Eugenio Aiello decided to abandon the motor-glider design and began the construction of a real plane. This was an absolutely original design and oriented, as before, to an aircraft without a tail. The new machine had a short, tubular fuselage with accommodation for a pilot and a passenger. The wooden wings had thin planes that acted as elevators along the trailing edge, and under the leading edge, independent from the wing and at its tips, were two little surfaces which had the function of ailerons. Rudders were located vertically under the middle of the wing. Trials were held at the end of 1931 at Lujan, and after several runs in which stability and obedience to control were tested, Aiello gave full power to his machine and raised it into the air only to crash while attempting to elude a wire fence.

The power plant for No 3 was an 8-cylinder Renault vee engine of 80 hp driving a four-bladed propeller manufactured by Aiello. Its span was 8,00 m (26 ft 3 in), length 3,00 m (9 ft 10 in), and weight 400 kg (882 lbs).

Aiello No 4 - Mr Aiello's fourth design was a parasol monoplane with the wings being independent of one

*Aiello No 2**Aiello No 3**Aiello No 3*



Aiello No 4



Aiello No 5

another. The fuselage was only 2,50 m (8 ft 3 in) long, resting on a tricycle landing gear of which the rear wheel was steerable through a lever in the cockpit. Two big surfaces on the rear of the wing accomplished the double function of controlling lateral and longitudinal stability. Two small vertical surfaces under each wing served to offset propellers torque, and the rudders were two vertical surfaces at the wing tips which were spring-loaded and actuated independently. Flight trials began on November 27, 1932 at the locality of Moreno near Buenos Aires, but as with his previous designs Aiello was once more disappointed and crashed his airplane against a cattle fence.

The power plant was an 80 hp Clerget, driving a two bladed propeller. Span was 8,00 m (26 ft 3 in), wing area was 17,00 m² (186 sq ft) and gross weight was 350 kg (770 lbs). Estimated maximum speed was 177 km/h (110 mph) and estimated stalling speed was 70 km/h (44 mph).

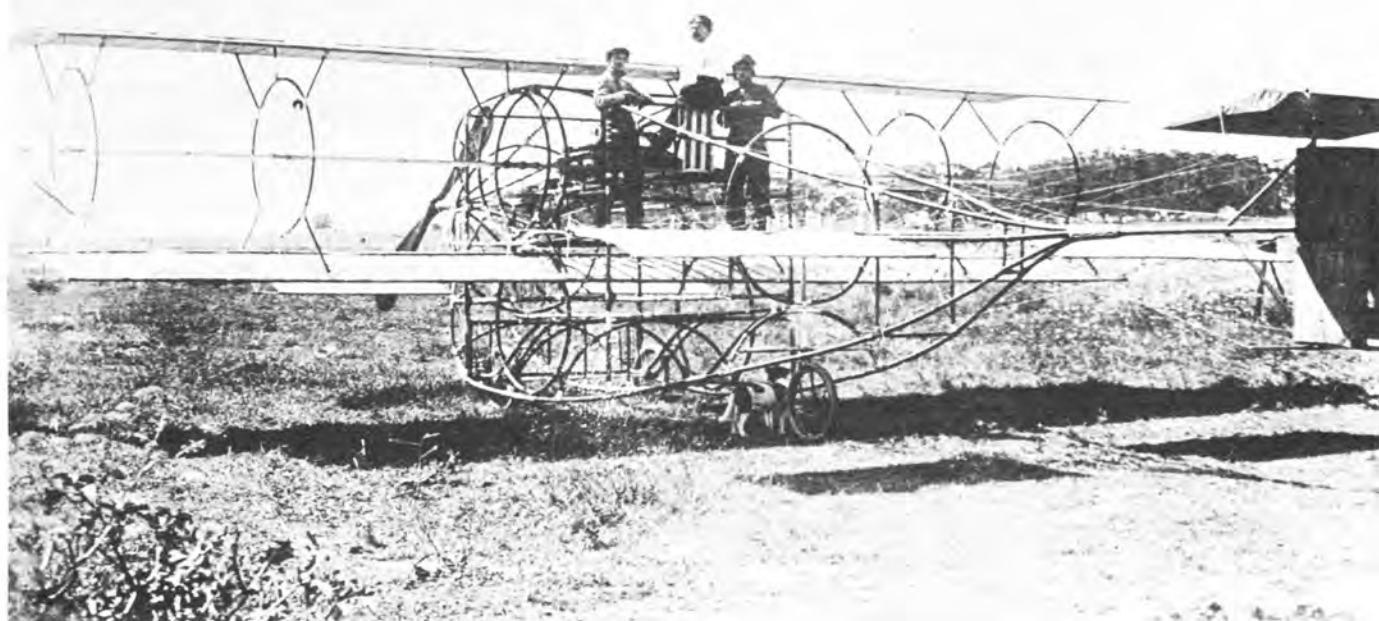
Aiello No 5 - For awhile Aiello gave up and purchased a Junkers A.50 powered by a Genet engine of 80 hp. However, his passion was stronger than his will, and in

1935, despite all his failures, he once again turned to creating his own designs. This time he built an autogiro with a tubular fuselage of 4,00 m (13 ft 1 1/2 in) in length and used the same landing gear and engine that had been a part of his No 4 model. To the rear, two stabilizers with a marked dihedral and a rudder were installed. Above the fuselage, the free rotor had a diameter of 9,00 m (29 ft 6 3/8 in). It consisted of only two blades of steel tube construction with aluminum covering. No success was obtained with this design, and further development was abandoned.

It should be noted that all of Aiello's home-builts were constructed without any technical knowledge, for when the designer began his work he was only a carpenter's apprentice in his father's workshop.

Artigala "Argentino I" - This airplane (not to be confused with Borello's later "El Argentino") was designed by Mr. Enrique Artigala in 1909 and was a very unorthodox biplane, being created before any foreign aircraft arrived in the country.

In order to undertake construction of the airplane the society "Sindicato Aereo Argentino" was founded,



Artigala "Argentino I" from the rear.

and later this society was to display the plane at the "Exposicion del Centenario" held in 1910 to celebrate Argentina's first century of independence from Spain. This was not accomplished, however, due to the lack of a suitable engine. It was not until mid-1911 that the engine arrived in Buenos Aires--a 3-cylinder, inline Buchet with a maximum output of 12 hp at 1800 RPM and a weight of 36 kg (79 lbs).

Once the engine was in Artigau's hands he completed the aircraft at Tigre, near Buenos Aires, making the propeller himself. Upon completion the plane was taken to the "El Palomar" (Pigeon House) airport, and there Artigau, who was not a pilot, tried unsuccessfully to fly it. After many attempts he concluded the fault was his inexperience as a pilot, and he handed the machine over to Lieutenant Raul E. Goubat who was then flying at the recently founded Escuela Militar de Aviacion (Military Aviation School) located at "El Palomar." However, he was also unable to raise the plane from the ground. From the accompanying photograph it is possible to appreciate all the rarities of this aircraft and, intuitively, the reason for its failure--the extremely low power of its engine.

Artigau "Coronel Pringles" - Pedro Artigau was one of the first aeronautical mechanics in Argentina, and he began his career together with Mr. Pablo Castaibert. In 1913, with his brother Bernardo, he helped Antonio Guido Borello manufacture the first Argentine biplane.

On October 16, 1915 the Borello's flying school at La Plata closed its doors due to the death of master-gunner Joaquin Oytaben. Bernardo then went to France, the country of his birth, to fight as a pilot. Pedro, who was also French-born but came to Argentina at the age of one, toured the province of Buenos Aires and returned to the city of Coronel Pringles where his family lived. There he began studies to complete his own aircraft. Work began at the end of 1916, and in August 1917 the airplane was finished, becoming the first Argentine biplane with a tractor airscrew. Its power plant was a Gnome-Rhone rotary engine of 50 hp which had belonged to the late Miguel Macho and had been saved from the Castaibert plane used by Artigau and Macho in their province of Buenos Aires tour.

The plane was very successful and a number of flights were made. Artigau then attempted to obtain his pilot's license and passed all examinations with his own design on July 8, 1918, obtaining license Nr 142. When World War I ended Bernardino returned to Buenos Aires, and the two established a workshop at Villa Lugano airport and worked on the modern machines that were arriving after the war. Later, Pedro Artigau took on the Buenos Aires-Montevideo air service of the "Compagnie Generale Aero-postale" (today Air France) and ran it until the cancellation of flights due to World War II.

Principal specifications of the "Coronel Pringles" were: Upper wing span of 13.00 m (42 ft 6½ in), lower wing span of 9.00 m (29 ft 5¼ in), length of 7.30 m (23 ft 11 in), height of 3.40 m (11 ft 1½ in), and wing area of 44.00 m² (473.44 sq ft). Empty weight was 320 kg (705 lbs), useful load 200 kg (441 lbs) and gross weight 520 kg (1146 lbs). Fuel capacity was 60 litres (16 U. S. gallons) and oil capacity was 17 litres (4.5 U. S. gallons). Maximum speed was 85 km/h (52 mph) and maximum duration of flight was two hours.

AVI 205 - During October 1957, work began on this new Argentine product in the works called "Famatex" owned by Musikansky Hnos. near San Martin in the province of Buenos Aires. Originally it was designated as the AVI E-185/9 or AVI HF2-185 as plans called for the use of a Continental E-185/9 engine. The original idea for this machine came from Mr Carlos Germano, supported by his friends, Carlos Spangerber and Jose Musikansky. Following a marketing study, they called upon three military engineers, 1st Lts Ricardo Olmedo, Juan Manuel Beverina and Justo P. Diaz, to carry out design work



Artigau "Coronel Pringles"



AVI 205

and calculations under contract. In charge of structures and construction at the works was ex-lieutenant Federico Seufert, and all matters pertaining to the interpretation of diagrams and computations was handled by aeronautical technician Mr Dilio Tomas Charlin. The first flight was made in mid-September of 1960 with Gerardo Martinez as pilot and the first prototype registered LV-X-22.

"AVI S.A. Industrial, Comercial y Financiera" was the firm especially created for the production of this light aircraft, which can be used for touring, passenger transport, agricultural work, training, etc. The engine in the production version should have been a Continental E-225-8 with a variable pitch propeller. A first batch of thirty machines was envisaged.

Details of the AVI 205 are as follows: Power plant is a single 205 hp Continental E series 6-cylinder, horizontally opposed, air-cooled engine, driving a fixed-pitch propeller. Dimensions are: Span of 11.41 m (37 ft 6 in), length of 8.00 m (26 ft 3 in), height of 2.20 m (7 ft 2½ in), and wing area of 20.00 m² (215.27 sq ft). The four seat tourer has an empty weight of 810 kg (1786 lbs), a useful load of 455 kg (1000 lbs) and a gross weight of 1.265 kg (2786 lbs). Fuel capacity is 220 litres (48 Imp gallons) and oil capacity is 12 litres (2.7 Imp gallons). The four seat tourer has a maximum speed of 220 km/h (136 mph), normal cruising speed of 180 km/h (112 mph), takeoff run of 115 m (380 ft), service ceiling of 2.000 m (6,550 ft) and a maximum ceiling of 5.400 m (17,717 ft). Its maximum flight duration is 5 hours and 50 minutes and it has a range of 1050 km (652 miles).

Borello I "El Argentino" - In the year 1909 the Italian-born engineer Antonio Guido Borello designed and built what should be the first Argentine biplane. This



Borello I "El Argentino"



Borello II "El Colorado"

was done in the city of La Plata, capitol of the province of Buenos Aires, with the help of friends and neighbors, and the work was based only on information received from European publications and newspapers. The general construction of "El Argentino" was similar to that of the French Farman plane, although it was much stronger and therefore considerably heavier. A Gnome-Rhone engine of 50 hp was chosen, but with it the airplane was underpowered. Although many takeoff runs were made, the plane never left the ground.

Borello II "El Colorado" (The Red One) - Between 1911 and 1913 Mr Borello again tried for success, using an improvised airfield located near Villa Lugano. Supported by the experience gained with his first aircraft, and with the technical help of Pablo Castaibert and the French pilot Claude Andre, he rebuilt his "El Argentino", making it lighter and altering the wing profile. Its first flight took place on July 9, 1913, the day when the republic celebrated its 97th anniversary of independence. It covered the distance of 60 km (37 miles)

to La Plata, the city in which Borello opened a flying school to use his plane. The first pilots of "El Colorado" were his mechanics, Bernardo Artigau and Pedro Artigau, who later built their own plane.

Borello obtained his license on August 12, 1914, but his plane had crashed before this. During a flight for some festivity on May 25, 1914, the plane crashed into the command deck of the warship cruiser General Belgrano with master-gunner Joaquin Oytaben at the controls. To replace the lost plane, Oytaben later gave Borello a Farman biplane built in Argentina by Marichal.

(To Be Continued)

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ABOUT THE AUTHORS: Antonio M. Biedma R. was born at Buenos Aires on March 24, 1897. He is the senior aeronautical journalist in Argentina, specializing in Argentine historical events, and is married to Mrs Claudia Salvat Grau and has no children. In 1926 he obtained pilot license number 303, and in the year 1932 he received his brevet as an autogiro pilot. Between 1934 and 1940 he published several books and edited the "Biblioteca Aeronautica" collection, including the following titles--Efemerides de la Aeronautica Argentina (1935), Diccionario Biografico Argentino (1936), and Leyes, Decretos y Reglamentos de la Aeronautica Argentina (1936). Presently a correspondent for several newspapers and magazines, he still writes monthly for the "Revista Nacional Aeronautica y Espacial" and "Aviacion y Astronautica." He owns the largest clipping collection on Argentine aeronautical facts. Almost in retirement, he deserves the title of President of the "Circulo de Escritores de Aeroastronautica" (C.E.A.) founded during the year 1953.

Federico Alberto Giro was also born in Buenos Aires, on the 3rd of January 1926. He has been an aviation enthusiast since the beginning of World War II and owns the largest private collection of books and photographs on aviation in Argentina. In 1944 he obtained his glider license. Presently, he is overseas correspondent for Flying Review International and writes steadily on WW II aircraft for Argentine magazines. He has been a Member of the A.A.H.S. since 1957 and also belongs to C.E.A. and Air Britain. Federico was married in 1952 to Brigitte Kopp and they have three children, Cristina, Dolores and Federico Jose, ages 13, 11 and 6.

EDITOR'S NOTE: This series will bring truly American flavor to the JOURNAL, covering important historical aviation activities in the southern hemisphere of the Americas for the first time in a number of years. It is expected that this series on the civil aircraft of Argentina will be covered in five parts. Thereafter, it is hoped that the authors will continue with a study of the military aircraft of their country.