





The Legacy of a Century of Aviation



100 Years Since the First Aerial Crossing of the Mediterranean

Courtesy of Association HERITAGE AVIONS Morane-Saulnier



Aviation 1913



- Four years after Louis Blériot crossed the English Channel, aviation underwent extraordinary development.
- Technology was evolving, flight controls were improving, engines were becoming more powerful and reliable, and rotary engines were gradually gaining ground for their power-to-weight ratio.
- More than 1,500 licensed aviators worldwide and almost 1,000 aircraft have made at least one flight... France leads the way [Jane's 1913].
- Altitude record: 5,880 meters [March].
- Speed record: 170 km/h.
- This marked the start of raids and long-haul voyages, in which Morane-Saulnier aircraft excelled.
 - In June, Frenchman Marcel Brindejonc des Moulinais circumnavigates Europe, passing through some of Europe's major capitals and covering more than 4,820 km without incident, including a flight from Reval [Estonia] to Stockholm [Sweden], a 400-km sea crossing.
 - Distance record at 1,450 km on Warsaw-Paris [Coupe Pommery].
 - Berlin-Paris in 10 h by Swiss Edmond Audemars [Batschary Cup].







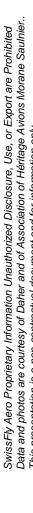


Roland Garros [1888 - 1918]



- Four years after Louis Blériot crossed the English Channel, aviation underwent extraordinary development.
- 1908: Roland Garros graduates from the HEC business school and becomes a dealer for Grégoire automobiles.
- 1909: discovers aviation at the Champagne Aviation Week.
- 1910: pilot's license no. 147 on Santos-Dumont "Demoiselle";
 hired by John Moisant's aerial circus in the United States.
- 1911: he returns to France to take part in the Paris-Madrid race, where he finishes 3rd.
- 1912: he becomes a star by winning the Coupe d'Anjou, and holds the altitude record at 4,960 m on a Blériot.







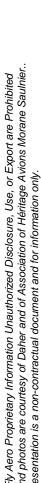
Roland Garros, Pilot of Morane Saulnier



- His record was beaten on 17/09 by Georges Legagneux on the new Morane-Saulnier type H at 5450 meters.
- After testing the aircraft, he orders two of them and signs a contract with Morane-Saulnier under which he is to perform two resounding feats, receiving 500 francs for each aircraft sold.
- December 11 in Tunis, he repeated his record with a flight to 5,610 m.
- He then returned to France with a sensational raid:
 - Tunis-Trapani: 320 km,
 - Trapani-Santa-Eufemia: 400 km, and
 - Santa-Eufemia-Rome: 438 km.



The first air link between two continents. The basis for an even bolder project



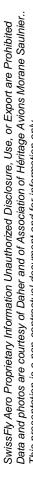


Sea Crossings



- On May 5, 1911, Edouard-Jean Bague flew from Nice to Gorgona Island [Italy], but disappeared during an attempted Nice-Ajaccio-Tunis seaplane flight.
- The same year, Englishman Cecil Grace disappears between Belgium and England.
- In November, the Italian Cagliari made a successful flight from Genoa to Bastia.
- In 1913, Louis Seguin [Gnome] aborted a project to fly from Marseille to Algiers via the Balearic Islands in a seaplane.



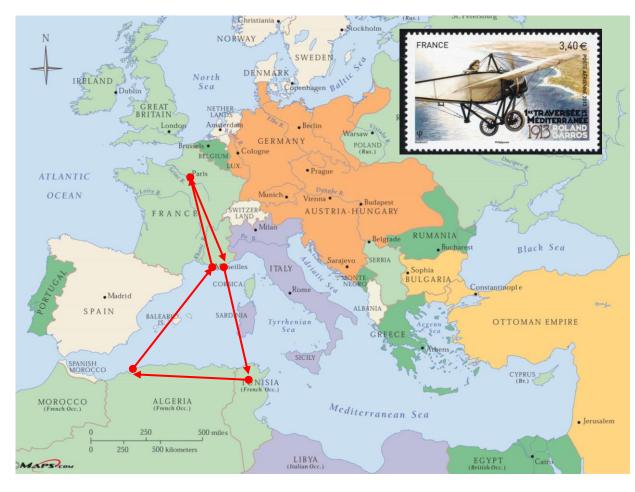


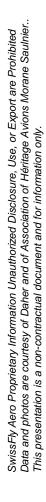


Raid Project



- His project involves a Paris-Fréjus-Tunis-Alger-Marseille-Paris route. Wishing to avoid media pressure, Roland Garros kept a low profile on his attempt.
- Only a few personalities and journalists knew about it... not even Raymond Saulnier and Léon Morane.
- Only at the last minute did he send telegrams to a dozen or so trusted journalists or partners, such as La Dépêche Tunisienne, which was responsible for providing fuel on arrival.



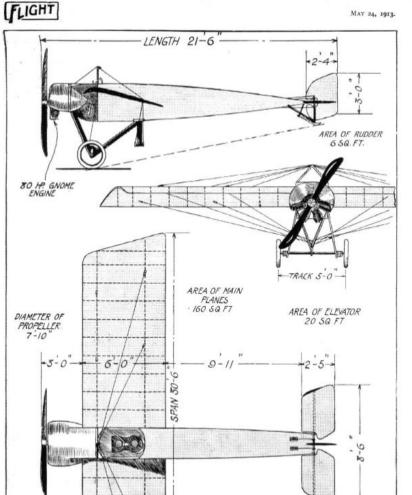




Morane-Saulnier Type H

SwissFly Aero

Engine	Gnome 7 Lambda or Le Rhône 9c Rotary Engine
Power	80 ch [variation between 50 & 100 hp]
Tank capacity [standard]	80 liters [200 litres]
Propeller	Chauvière 2,3 m
Wingspan	9,20 m
Length	6,40 m
Height	2,26 m
Empty Weight	268 kg [300 kg maximum limit]
Maximum Weight	444 kg [580 kg maximum limit]
Maxim Speed	125 km
Catalog Price 1913	31'000 French francs [10,5 m € EC 2023]



"Flight" Copyright.
THE 80-H.P. MORANE-SAULNIER MONOPLANE.—Plan and side and front elevation to scale.

562

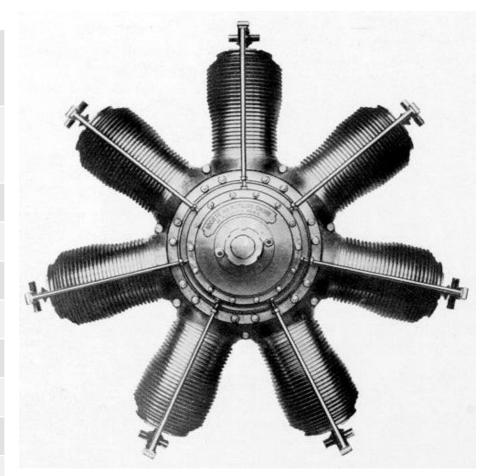
MORANE - SAULNIER MONOPLANE 80 H. GNÔME ENGINE



Engine



Note # 1	Selection of the Gnome 7 Sigma engine, lighter and more fuel-efficient than the 80 hp Lambda engine.
Note # 1	Derived from the Omega of 1910, the first mass- produced aircraft engine [4 engines per day in 1913].
Engine Capacity	9.5 I displacement
Power	60 hp at 1200 rpm
Fuel	40/50 octane
Lubricant	Castor Oil
Max fuel consumption	30 I per h
Lubricant consumption	6 I per h
Dry weight	87 kg
Catalog Price 1913	13'000 francs [4,4 m € EC 2023]





Propeller







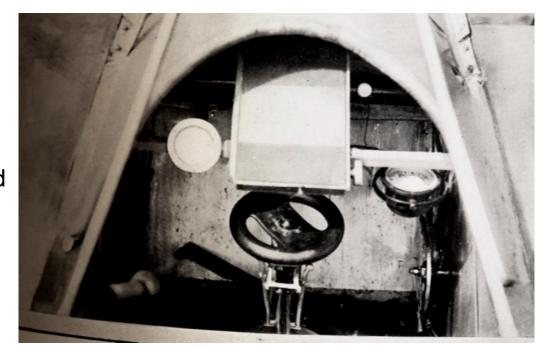
Chauvière Propeller "Intégrale": 2.3 m diameter



On Board Equipment



- Rev counter.
- A map table.
- A compass loaned by Edmond Audemars, a Swiss pilot friend and one of the founders of Jaeger.
- A needle float as a fuel gauge.
- Hand pump to feed the main tank.





Pilot Equipment



- Two watches: one on the left wrist indicating French time, the other on the right wrist set to noon at the time of departure [brand unknown: Cartier or Zenith?].
- Driver's business suit with tie, sweater, newspaper to keep out the cold, and waterproof suit over it.
- Balaclava and goggles.



Weather

- Bureau central de "météorologie" [decree of May 14, 1878 1921].
- "Forecasting" consisted mainly in studying meteorological observations in an attempt to find a similar "type of weather" in past situations, and extrapolating the movement of phenomena identified on observation maps.
- The French Navy set up the first bulletin collection service On Sunday September 21, 1913, Roland Garros was warned of favourable conditions for his departure.
- The very next day, Roland was in Fréjus.



BULLETIN MÉTÉOROLOGIQUE

du Midi, 16 à Calais, 15 au Ventoux, 8 à la Hague, 7 à Bordeaux, 6 à Belfort, 2 à Paris.

de pluie dans le Centre et l'Ouest de l'Europe; en France, il an Havre, 3 à Biarritz, 4 à Paris,

Le dimanche 21 septembre. - Le vent souffle d'entre Quest agne et en Gascogne, assez fort avec mer agitée au Pas-de-Calais et en Proyence. Des pluies se sont produites dans resque toute l'Europe. En France, on a mesuré 9 nº d'eau

de la Manche et de l'Océan, d'entre Ouest et Nord dans le

Clermont-Ferrand, 1 à Nancy.

Le mardi 28 septembre. - Le vent est faible d'entre Est et Sud sur les côtes françaises de la Manche et de l'Océan ; il est assez fort du Sud en Bretagne, faible et de direction variables en Provence. La mer est très houleuse à Ouessan agitée à la pointe Saint-Mathieu. On signale quelques pluies dans l'Ouest et le Centre de l'Europe; en France, on a noté de faibles ondées vers le Pas-de-Calais.

Le mercredi 24 septembre. - Le vent souffle d'entre Est et Sud sur les côtes françaises de la Manche et de l'Océan, de l'Est en Provence, il est assez fort avec mer houleuse en Bretagne. Des pluies sont tombées sur les Iles Britanniques et sur l'Europe Centrale ; en France, le temps a été générale-

Le jeudi 25 septembre. - Le vent est modéré ou assez fort d'entre Est et Sud sur les côtes françaises de la Man-

bservations de Paris (Paro Saint-Maur). - Températures extrêmes en France, en Algérie et en Europe

	TEMPÉRATURE						DIRECTION			EN ALGÉRIE ET EN EUROPE		
DATES	MINIBUM	MATCHUM	Moyen- nes des observa- tions de 3, 6, 9, 12, 15, 18, 21, 24 heur.	TEMPÉ- RATURES NOT- males	PRESSION atmos- phérique A MIDE (alt. 50°,3.)	HUMI- DITÉ relative A MIDI (de 0 à/100)	NÉBULOSITÉ A MIDI (de 0 à 10)	et FORCE du VENT A MIDI. (force de 0\(\hat{\lambda}\right)	PLUIR TOTALE (Millim.)	винина		MATIMUMS
Vendredi 19	7*,5 å 5b.45**	19*,7 å 13h,16**	120,7	140,2	758**.7	73	6	SSW.2	0,0	- 4°,8 Mont Mounier (alt. 2.740°); 8° Sétif(alt.1.079°.); - 5° Spitzberg.	30*	La Coubre; Biskra; Bucarest.
Samedi 20	9*,7 à 1h 25*	17*,8 å. 14h.55=	12°.7	14*,1	756mm,7	83	6	N W. 1	4,2	- 5°,4 Pic du Midi (all. 2.859°); 12° Sétri; - 4° Spitzberg.		Perpignan; Biskra; Bucarest.
bimanche 21	7°,0 8 6b.10°	19•,2 à 13h.0**	12*,8	14°.0	762,2	58	6	SW. I	0,0	- 6°8 Pic du Midi; 12° Sétif; - 6° Spitzberg.	34*	Nice; Laghouat; Athènes,
Lundi 22	10°,2 å 2h.58=	17*,0 1 , 14b.	13*,2	13*,8	762,9	74	10.	W S W. 2	0,0	— 3° Mont Mounier; 9° Sétif; — 3° Uléaborg.	35*	La Coubre, Pe pignan, Ma seille, Nice; Laghouat; Alicante, San Fernand
Mardi 23	11°,0 à 45.0°	20°,5 å 13h 15°	14*,5	13*,7	759**,6	72	7	SSE. (0,0	-2°,6 Mout Mounier; 13° Sétif; -8° Spitzberg.	330	Biarritz; Laghouat; San Fernand Porto.
Meroredi 24.	9*,9 å 3h.55**	22*,1 à 13h.40°	15•,2	13°,5	757** 9	52	,	Е, з	0,0	1°,4 Mont Mounier, Pic du Midi; 13° Laghouat; — 5° Haparanda.	34*	Biarritz ; Laghouat ; Bilbao.
Jeudi 25	8°,0 à 5h.45°	23°,0 à 13h.10°	15°,4	13*,3	758**.1	63	2	S, 1	0,0	2º Mont Mounier; 12º Sétif, - 2º Uléaborg.	35e	Biarritz; Biskra ; Bilbao .
MOYENNES	9*17	19-90	130,79	13*,80	7590=.44			GTAL	4,2			

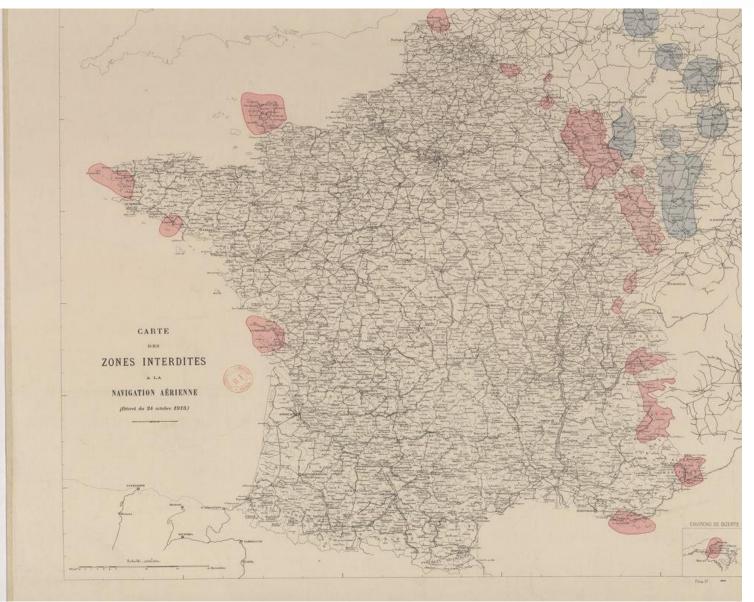
ota. — Les noms sont marqués d'un astérisque* lorsqu'il existe de nombreuses lacunes dans les tableaux des températures extrêmes.



Areas Closed to Air Traffic



Restricted areas are in red





The Team



The Mechanics:

- Jules Hue, the loyal mechanic
- Pierre Schock, assistant mechanic, stationed in Sardinia

The Impresario:

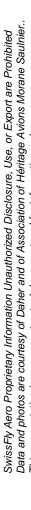
Edouard Manselon, in charge of the media

Influential Supporters:

 Léon Barthou, and his brother Louis Barthou, Prime Minister



His Girl-Friend Marcel Gorge



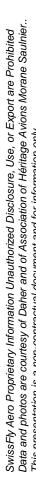


Fréjus Naval Aviation Base



- In early September, Jules Hue installs an additional 120-liter fuel tank plus a reserve of lubricant [castor oil] on the Type H chosen for the raid.
- Discreet transport of the aircraft to Fréjus.
- It is housed at the Fréjus naval aviation base, recently created by the French Navy.
- 15-day wait with prevailing southerly winds.
- On Sunday September 21, the weather seemed more favourable.
- Roland Garros arrives at 12.55 p.m. on the Express from Paris the next day.







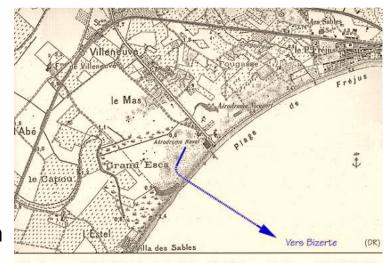
Departure from Fréjus



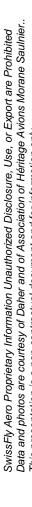
- It's still dark when the sailors come to pick him up by car.
- The sea is calm and the offshore breeze has died down.
- The plane is pushed out of the hangar.
- Present at the departure were, in addition to the sailors, a few press correspondents who had been taken into confidence, and his friend Marcelle Gorge.
- "Everything had been meticulously prepared, and all that remained was to set off. It was as simple as I'd imagined... a brief farewell to the officers, to a friend; then Jules' drawling voice pronounced the usual: contact. Voilà!"



- Held by ground crew for engine test.
- 5 h 47 take-off from Fréjus.
 Heading east.
- Climb to 1,000 m



D'après carte IGN de 1913 : l'endroit d'où a décollé Garros le 23 sept 1913 à 5 h 47

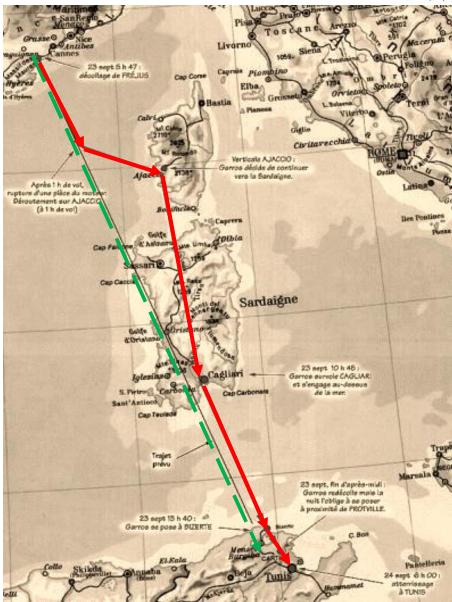


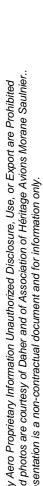


Flight over Corsica



- Climbing to 1,000 m. Clear weather. He sees Corsica.
- At around 6.50 a.m. "a sinister burst of broken metal, a shaking of the whole aircraft".
 A dent appeared on the hood.
 Oil splashes onto the bonnet.
 Regular engine knocking.
- Instinctively, he changes course to approach Corsica.
- 8.10 am: Garros is reported between the islands of Sanguinaires and Barbicaja.
- Spotted across Ajaccio at 600 m.
- As the engine is running, he chooses to continue the flight.
- 10.30 a.m. sighting at Bonifacio.







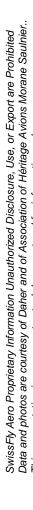
Flight over Sardinia



- It reached Sardinia at 10.45 am, flying over it at 1,500m.
- The wind had shifted to the south and his ground speed was only 100 km/h.
- At 11.45 am, he descended to 800 m to regain ground sight to signal his passage to Pierre Schock, his mechanic, but he couldn't spot him.
- He was over an hour behind schedule, but decided to continue towards Tunisia.
- He climbs to 3,000 m to save fuel.



Painting by Benjamin Freudenthal





Zone Danger



- 13.00 pm. "As the flow from my rear tank stopped, I knew that all I had left to reach Africa was the twentyfive liters of gasoline indicated by the level of my small front tank".
- He saw the three French Navy torpedo boats that had left Bizerte, heading for Sardinia. "I cut the ignition and spiraled into the clouds. The torpedo boats grew larger. They were steaming headon towards Cagliari and couldn't see me. I was only 300 m away".
- The engine starts up again, and he's in sight of the coast.



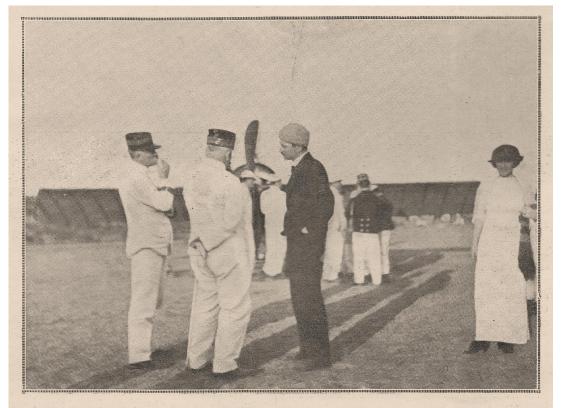




Arrival in Bizerte



- At 1.40 pm, running out of fuel, he was unable to reach Tunis.
- He chose to land at Bizerte on the base's maneuvering field.
- There were only 5 liters of fuel left in the tank.
 "The first man I saw was a soldier in a burgundy jacket.
 Then, boldly: Do you come from far away? From
 France".
- He smiled quizzically and said nothing more.
- The first officials came to greet Roland Garros, including General Joseph Fournier,
- Then the crowd arrives...



Sur le champ de manœuvres de Bizerte: Garros s'entretenant avec le général Fournier | gouverneur de la place.



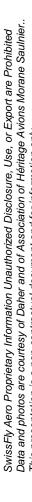
Welcome to Bizerte & "Selfies"





 Roland Garros looks unhappy on both photos because he failed to reach Tunis where he was expected.





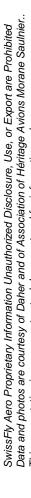


Impromptu Stopover in Protville



- Repairs take time and officials still await Garros in Tunis.
- 6.40 pm Garros takes off from Bizerte
- 7.05 pm Surprised by the darkness, he lands in the field of Si Hadj Malki, 2 km from Protville.
- He is rescued by a patrol of cavalrymen from the 4th Regiment of African Chasseurs, commanded by Brigadier Charvet.
- Sheltered by the postmaster, Garros receives a congratulations telegram from the Prime Minister and can finally get some sleep.
- At midnight, he is awakened by officers and sappers from Lieutenant Reimbert's air squadron from Tunis, bringing repair equipment and spare parts.







Brief Visit in Tunis



- 6.40 a.m. take-off for Tunis
- 7.15 a.m. arrival at the Kassar-Said racecourse, used as an airfield
- 7.30 am Roland Garros decides to interrupt his trip and return to France by boat
- 8.00 a.m. the plane is dismantled and taken to the port of "La Goulette" for the return flight to France.
- At 9.30 a.m., Roland Garros is at the port to embark. He is welcomed by the mayor of Tunis, and General Pistor's representative.
- Sappers from the aviation squadron help the staff of the Manouba liner board the plane.







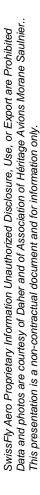
Triumphant Return in France







 "I am pleased to congratulate you on your daring and magnificent feat, which honours both your personal courage and French aviation."
 Louis Barthou, Prime Minister





What Next?



- "It has now been proven that the Mediterranean can be crossed by plane, and should the need ever arise, our military aviators could repeat the trek.
- Crossing the Atlantic seems feasible...even today.
- My plan would involve three stages: England Iceland, Iceland - Newfoundland, Newfoundland - America. With refuelling at these points, the raid is feasible. There would be two stages shorter than the one I've just covered, and one not much longer... "





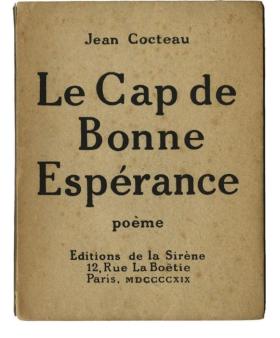
In the Culture











Monument in Bizerte





On April 19, 1914, the mayor of Saint-Raphaël, Léon Basso, symbolically donated the monument to the town of Fréjus, featuring a sculpture by Louis Patriarche, verses by poet Jean Aicard and a bust by Étienne Forestier.





From Feat to Regularity



.

Information Unauthorized Disclosure, Use, or Export are Prohibited esy of Daher and of Association of Héritage Avions Morane Saulnie contractual document and for information only.

- 1914: the first military aircraft cross the Mediterranean.
- 14-18: the Navy opens seaplane bases on the coasts
- 1919: creation of SMTA, which becomes "Aéronavale" for regular seaplane courier services
- 1925: first regular Marseille-Tunis passenger service by seaplane - 6 h
- 1929: first Marseille-Alger route by land plane







Memorial in 2003





 Christian Briand, welcomed by Mahmoud Ben Mohamed, Chief of Staff of the Tunisian Air Force, and Amor Zaïbi, representative of SOCATA aircraft in Tunisia. A commemorative flight on September 23, 2003 of the TBM 700C2 "Spirit of Roland Garros" from Cannes to Bizerte, piloted by Christian Briand, EADS Socata chief pilot and test pilot.





The Centennial in 2013



- Baptiste Salis with the Type G replica built by Replicair.
- 110 hp Rotec engine.
- 7 hours 44 minutes flight time along the Roland Garros route, at 2,000 m.
- The Morane-Saulnier was followed by a microlight and three two-seaters.
- At Bizerte, they were joined by other light aircraft from Cannes.







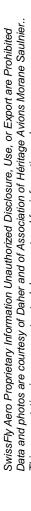
110 Years on...



- Technology has evolved and flying has become commonplace, but...
- Aviation faces new challenges: Environmental, Energy, Economic, etc.
- The level of "acceptable risk" is higher than in 1913.
- There are still many unknowns about atmospheric movements and weather forecasting.
- Isn't that what makes aviation so exciting?









Final Word



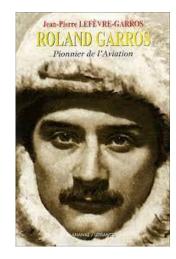
"How, with men like him, can we not rejoice that we live in a time when such feats are possible? I'm well aware that, in thirty years' time, in fifty years' time, there will be "aérobuses" crossing the Mediterranean non-stop, but we will have been in eras that applauded the first attempts, and we will be able to say with pride: "In our time, we did it better!" And nothing could be truer, for the "aérobus" will cross the sea without danger, and Garros, once again yesterday, has risked his life boldly, and, in all likelihood, he did it for nothing, for glory..."

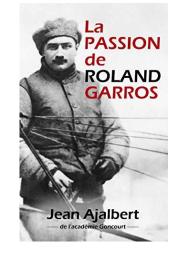
Henri Desgrange, director of l'Auto [forerunner of "l'Equipe"] and one of the founders of the Tour de France cycliste

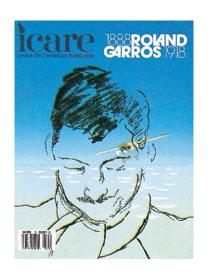


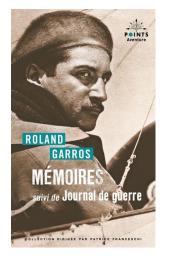
The Sources

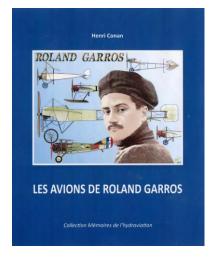






















Thank You

Association
HERITAGE AVIONS
Morane-Saulnier



https://moranesaulnier.org/

