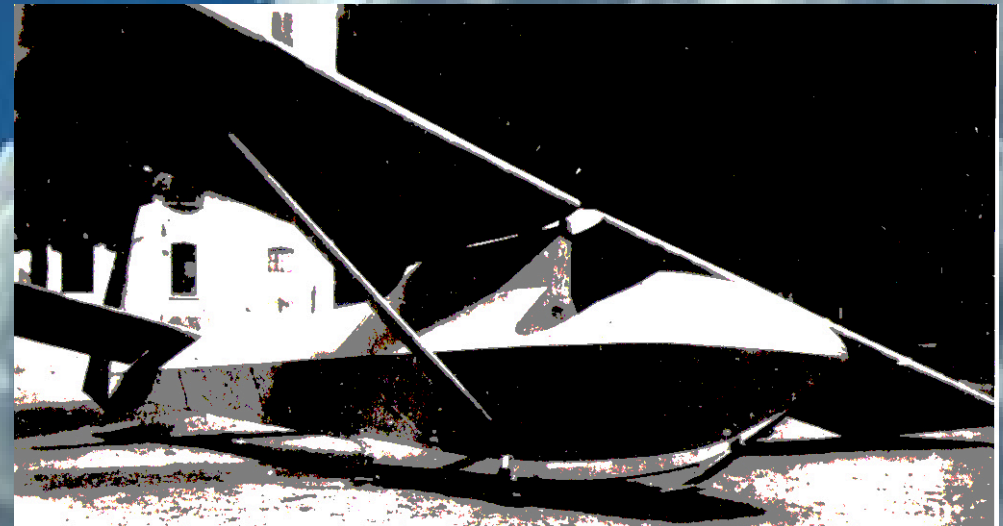
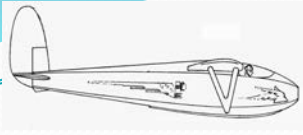


Ermanno
Bazzocchi
his gliding activity
his projects





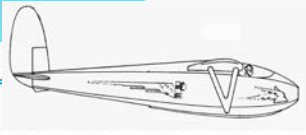
Foreward

Ermanno Bazzocchi was a designer known all over the world especially for his MB-326 and MB-339 aircraft, which were built in various versions. Thanks to the MB-339 PAN version, flown by the Italian Air Force aerobatic team in the skies worldwide, the name of "Aermacchi, the aircraft manufacturer, and that of the aircraft designer became familiar to millions of people. However, few people know that the designer career of Dr. Bazzocchi had started in the field of gliders. I therefore thought it appropriate to write this monograph and thus highlight the passion for gliding of this smart engineer, who also represented a life coach for me and a shining example during my professional activity. In fact, after getting my high school degree in aeronautics and being also a flyer, I was recruited by Aermacchi in 1960. For over 30 years I had been employed in the Engineering Division under his leadership. As a glider pilot, I hope to succeed in giving a personal contribution to E. Bazzocchi, the man who had also been a glider designer.



The MB-339PAN in perfect alignment during an air show.

(to be continued on page 3)



Foreward

(continued from page 2)

Before going to the heart of his gliding activity, it is worth underlying that this work has been facilitated and simplified by a wonderful book narrating Bazzocchi's entire life, his projects, his accomplishments and the personal contacts that were significant in his life.

The authors of this book (the cover of which is shown alongside) are two engineers: Paolo Mezzanotte and Alessandro Neviani. I had the pleasure of being their colleague at Aermacchi for many years. I warmly thank them for allowing me to draw on their editorial work and for providing me with the computer files of text and images from their book.

M.R.Martignoni



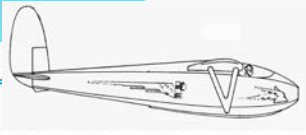


First steps in the world of flying objects

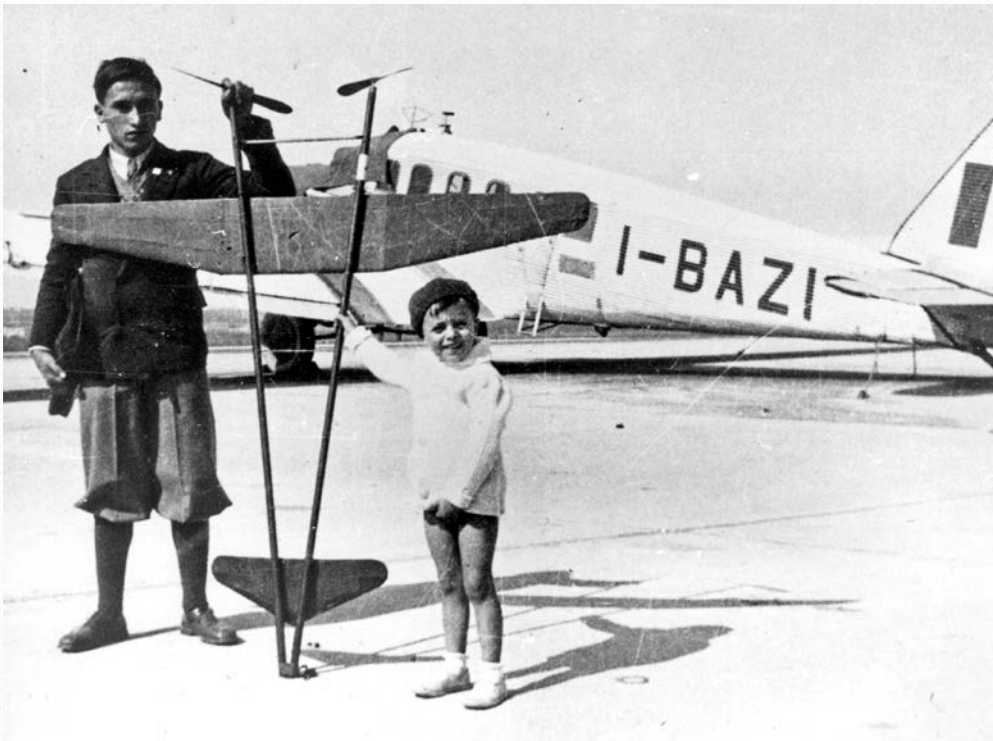
Ermanno Bazzocchi was born in Tradate on March 27, 1914. He completed his high school course of study very successfully and got a degree with high marks in 1933. Meanwhile, Ermanno was taking time away from study and amusements to pursue his passion for aircraft model, also involving his schoolmates in this activity. He attended the aircraft models school of the "Clemente Maggiora" Aero Club at Varese, where he met, among others, Umberto Frattini, and this teenager would remain a lifelong friend, in close contact with him, and would even survive him. At the Aeroclub, among his acquaintances, there was also Plinio Rovesti. We will find him again later on, as the leader of the "Dal Molin Group, and a major figure in the Italian gliding world. The young Bazzocchi tested his models near Vedano Olona bridge, in a natural depression, whose shape allowed an easier recovery of the models. Since then he had shown a keen interest in the canard formula, but this had also given rise to some hasty comments, such as: "he has not yet figured out where the tail is to be placed". Here is a description of that season in his own words:



«With my savings I could buy an elastic powered flying model which, however, ended up on the top of the wardrobe in my parents' bedroom, and there it stayed until I successfully ended my school year. Then I used to cross my village and reach the playing field where I could fly my model. All the roofs of the houses on the edge of the playing field hosted my models, and many times I had to struggle to recover them from hosts, who were losing their patience. I also began participating in model competitions organized by Italy's Aero Club, first in the provincial sites, then in the regional ones and finally I took part in the national contests in Rome. The first three finalists of each race were eligible for the next one and so on. For three years I had managed to go to the finals in Rome. My best score was a second place».

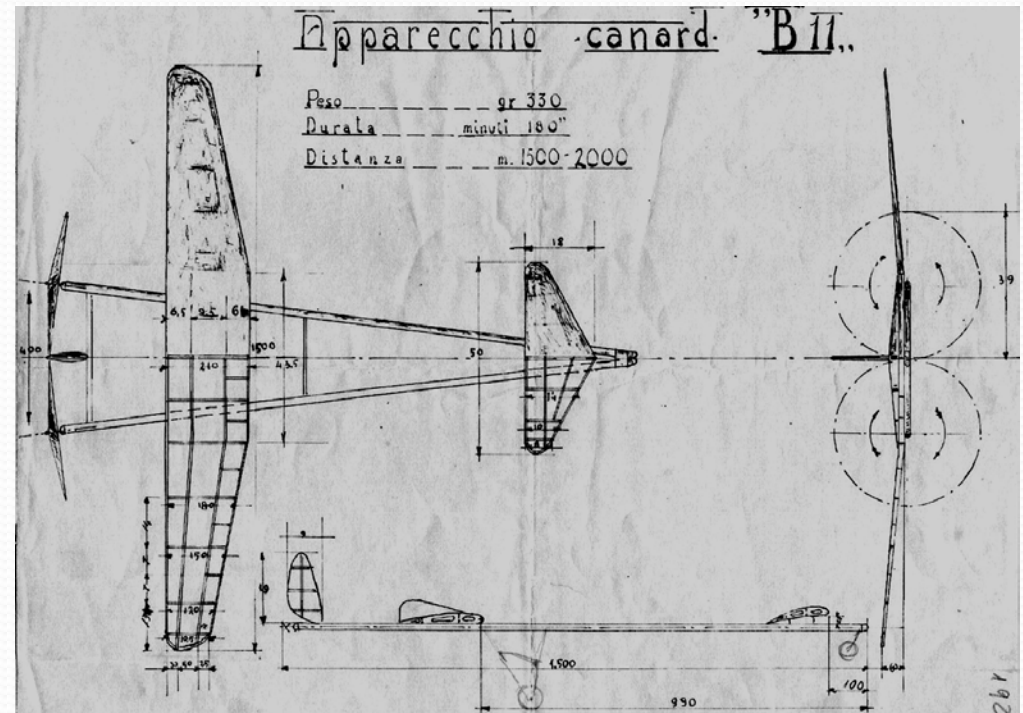


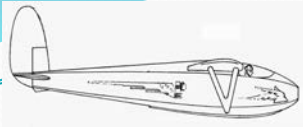
First steps in the world of flying objects



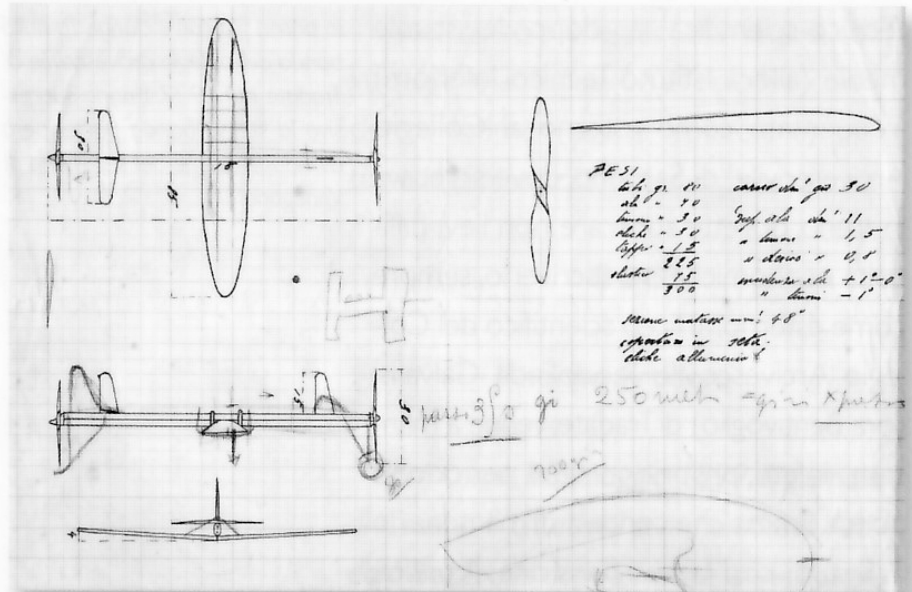
E. Bazzocchi with his "canard" model. In the background, an aircraft with the prophetic initials I-BAZI (at Aermacchi he was nicknamed I-BAZ).

The elastic powered "canard" model B11





First steps in the world of flying objects



These included a provincial competition, followed by a regional one and then the finals in Rome, and we were right there. One day I was called by Milan Aero Club and asked to set up a Flying Model school at their headquarters, on Ugo Foscolo street. I accepted. On Sundays, I travelled from Tradate to Milan to organize this Flying Models school, and there, for the first time, I met Preti and Frati, who were very young (they would later become lecturers at Milan Polytechnic University).

Already in 1929, at the age of 15, he frequently visited the "Emilio Pensuti Aero Club of Milan (which also included Arturo Toscanini among its members). This Club organized courses for the design, construction and launch of flying models under the guidance of talented specialists, such as Dr. Antonio Longo, head of Caproni Aerodynamic Department.

«I think that since 1929 I had begun participating in flying model contests, which consisted of various stages at that time.





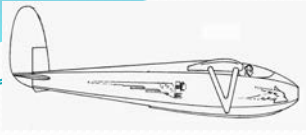
First steps in the world of flying objects



This was the beginning of a long-lasting friendship with Preti and a lifelong friendship based on affection and esteem with Frati ».

The sport news of that time repeatedly reported on his participations in the student sport championships: on August 3, 1930, he ranked third in the provincial heats of the second national "Flying Models" contest, organized by the Aero Club at the field of Taliedo. Then he competed in the national finals (Bonmartini cup) at Littorio airport (now renamed "dell'Urbe").

On April 12, 1931, he took part in the first provincial "Flying Models" competition promoted by Milan Aero Club getting a third place (the prize: one hundred Lire); in July he won the fifth prize in the competition held in Monza park; on October 5, he finished fifth in the national contest (Bonmartini Cup) at Littorio airport, while his friend Frattini came eleventh. On January 29, 1932, the "Clemente Maggiora" Aero Club of Varese organized a competition in which the models had to take off from the frozen surface of Ghirla Lake instead of being launched. Bazzocchi won it with a three-minute flight (models were then powered by an elastic band). On July 17, 1932 he got the second place in the provincial competition of Taliedo, and on September 26, he came second again in the national final in Rome, earning a prize of one thousand lire. Bazzocchi also qualified for the final in September 1933 for the third consecutive year. In his archive there are still traces of the letters exchanged, in that period, with peers, who shared the same passion. They concerned the way to find and interchange the necessary materials (liquid acetylene for handcrafted model engines, casein, emallite, etc.).



First steps in the world of flying objects



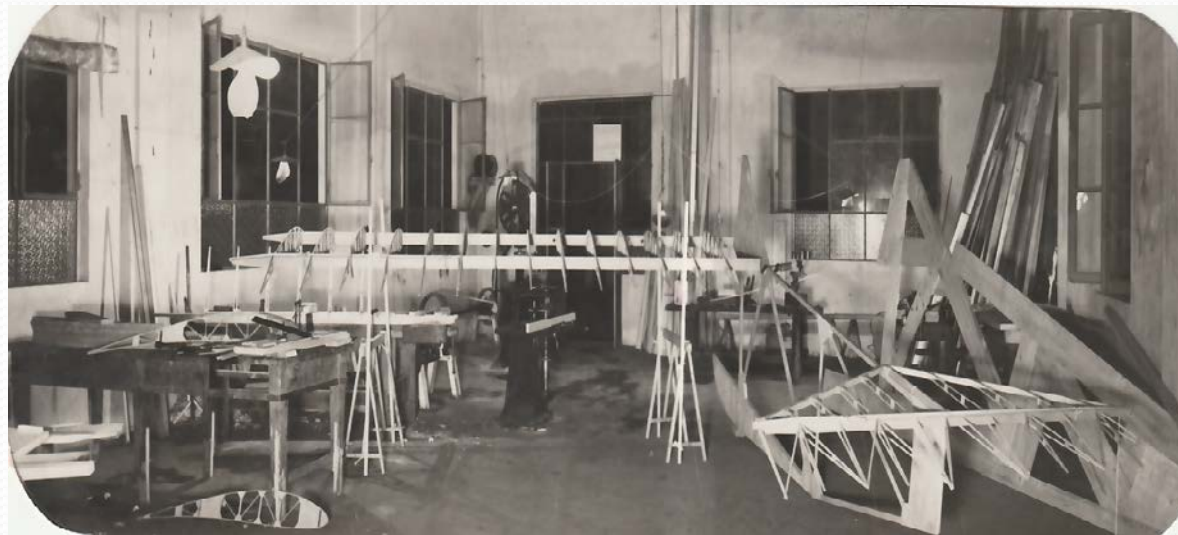
Beside his commitment to the construction of models, his training and tutor activity (as we would call it nowadays) at the Aero Club school, from 1931 on he got increasingly interested in gliders. For a provincial high school student this was not a small commitment. Despite this feverish activity, in 1933, he obtained a high school degree and a silver medal for his good conduct and good school achievements. A few months later, on September 23-24, he still took part in the national finals.

Bazzocchi is watching the launch of his model at Littorio airport during the 1930 finals.



From aircraft models to the gliding world

At the age of 16, in December 1930, during his high school studies, Bazzocchi joined the new "Dal Molin" Group. Thus, he could participate in the courses and events that took place in 1931, and thus also started his passion for gliders. In the "Dal Molin" Group he met his friend Umberto Frattini again. This had become an aircraft modeler and, in 1931, he had been one of the first to get a Flying Certificate at Pavullo Nel Frignano, together with Rovesti.



In the "Dal Molin" workshop, Varese flyers initially built two simple gliders in 1931, followed by the large "Roma" amphibious glider and then by eight units of its smaller version viz. the "Varese" amphibian glider.

The following year, before matriculating at Polytechnic University, Bazzocchi enrolled on the glider flying course at Cantù school. This had just been set up by the Aero Club of Como and was also used by the Aero Club of Milan, before the latter opened its own school at Taliedo in 1933. To attend the course, Bazzocchi regularly rode from Tradate to Cantù on his bicycle. On January 8, 1933, after the 24th launch, he obtained the "A" certificate, together with Adriano Mantelli, with whom he struck up a long fraternal friendship. Mantelli made his trip from Parma to Cantù by bicycle too, covering 170 kilometers.



From aircraft models to the gliding world

It is worth underlying that, in those years, thanks to the “Dal Molin” group, Varese showed a lively enthusiasm for flying. This reached its peak in 1933, when 9 gliders built by the same group were launched from “Campo dei Fiori”. In September 2020, the “Centro Studi Volo a Vela Alpino” published a document that collected all papers and pictures concerning this exceptional event. The document can be seen and downloaded using the following link:

https://www.csvva.eu/attachments/article/122/lancio_dal_campo_dei_fiori.pdf

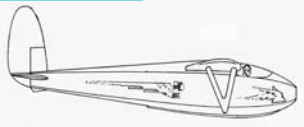


LANCIO DAL CAMPO DEI FIORI A VOLO VELEGGIATO DI 9 IDROVELEGGIATORI VARESE 16 SETTEMBRE 1934 ANNO XII E.F.

Launch from “Campo dei Fiori” for a soaring flight of 9 gliders (8 of the “Varese” type and 1 of the “Roma” type), in September 1934, XII year of F.E.



The QR code to access the document



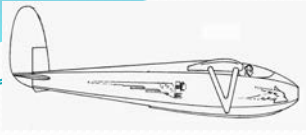
From aircraft models to the gliding world



*Left photo:
Robert Kronfeld, the famous Austrian pilot and glider engineer (in white overalls in the center), and Mantelli on his right at Taliedo airport, in 1933. Kronfeld had been invited by the Aero Club of Milan to show the most modern launch systems and hold a course of "winch towing" for pilots having an "A" license.*



*Right photo:
Flying event organized by the Aero Club of Como:
Plinio Rovesti is the 4th standing on the right,
Bazzocchi is the 2nd on the right and Umberto
Frattini is the 1st at bottom right.*



From aircraft models to the gliding world



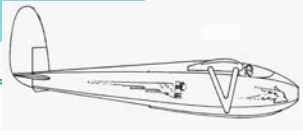
E. Bazzocchi on the "Zoegling" primary glider built by the "Dal Molin" group

From low-performance gliders to soaring gliders

When he entered the Royal Polytechnic University of Milan, in the autumn of 1933, Bazzocchi had already built many successful aircraft models and at the same time he had also started going to Cantù gliding school. While he was diligently attending the engineering courses, he also began to "sketch" imaginary gliders, without considering any construction problems. He would, however, later approach a more feasible configuration. Bazzocchi remembered the transition from flying models to gliders with these words:

«In 1933 when I enrolled at Polytechnic University, I thought it was time to tackle more challenging things. So I designed a glider with a wingspan of twelve meters because, in the meantime, I had started attending the gliding school organized by Milan Aero Club at Cantù. My budget was pretty tight, but, using various solutions I started building my glider anyway».

Thus, he began building his own project, the EB-1, later called "Littore", which is dealt with in the following paragraph.



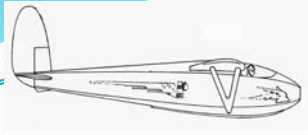
From aircraft models to the gliding world



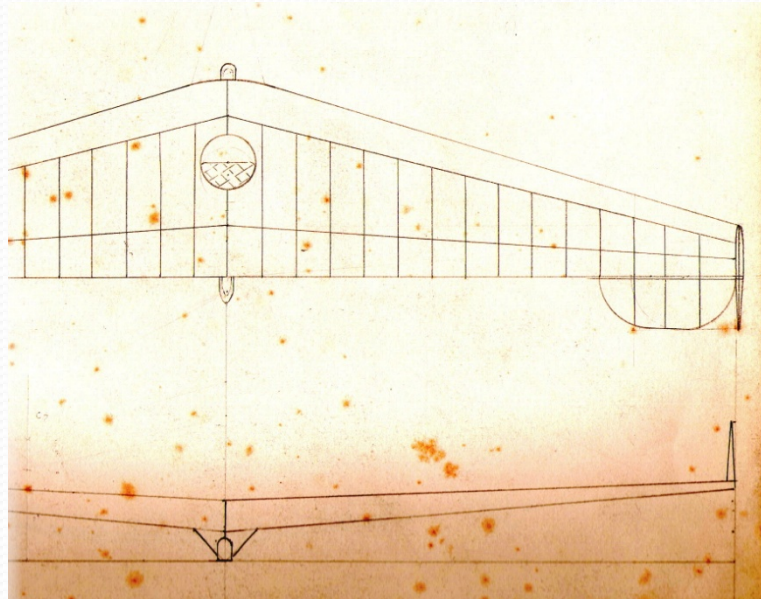
At Polytechnic University he found a creative and eclectic environment and smart people: Ermenegildo Preti, Stelio Frati, Vittorio Calderini and other names that later became famous. *«When I entered Polytechnic University in 1933, an idea had already come up viz. the initiative of creating a Gliding Center. The main promoters were Liberato De Amici, a student who was one year ahead of us, Fulvio Padova, who later became a very good Air Force officer, and then died in an accident near Malpensa, at Cameri. Thinking back to those years and to that group of students, I cannot fail to mention my dear friend Galimberti, who was not only a brilliant student, but also a great and very skilled pilot. He certainly was one of the first CVV members, who gave an impetus to the success of the construction and test activities [...] Together with this friend of the early, very early days I joined the above group [...]. In the first years*

of the CVV flight activity it was Dr. Ravizza, who played an important role with his successful and very interesting flights. This is how our activity and our participation in the CVV gliding center began».

The CVV, considered the embryo of the Aerospace Engineering Department, was led by Dr. Enrico Reborra, while Maurizio Galimberti supervised the flight operations. It subsequently became the center for the development of Preti's gliders. Since early 1935 Bazzocchi had been the head of the Construction Section. Liberato De Amici was the executive of the G.U-F. (Fascist University Group) gliding section, which operated in the context of the Emilio Pensuti Aero Club. Here, in January-February 1935, Fulvio Padova organized team training sessions with winch launches, for the "Littoriali". In March-April 1935, Bazzocchi attended the above sessions concurrently with the course to get the "B" certificate. De Amici died on May 8, 1935 during the Littori flights; the CVV was named after him and his charge was taken over by Fulvio Padova.

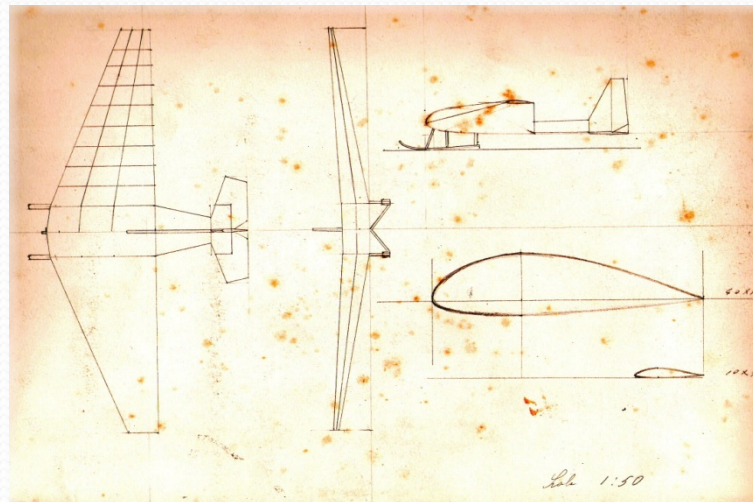
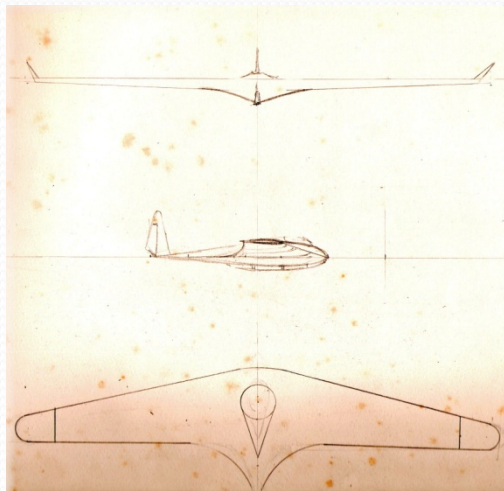


Design and construction of the EB-1 glider

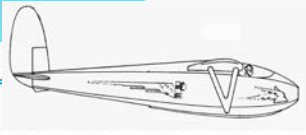


Bazzocchi built his wood glider piece by piece, day by day:

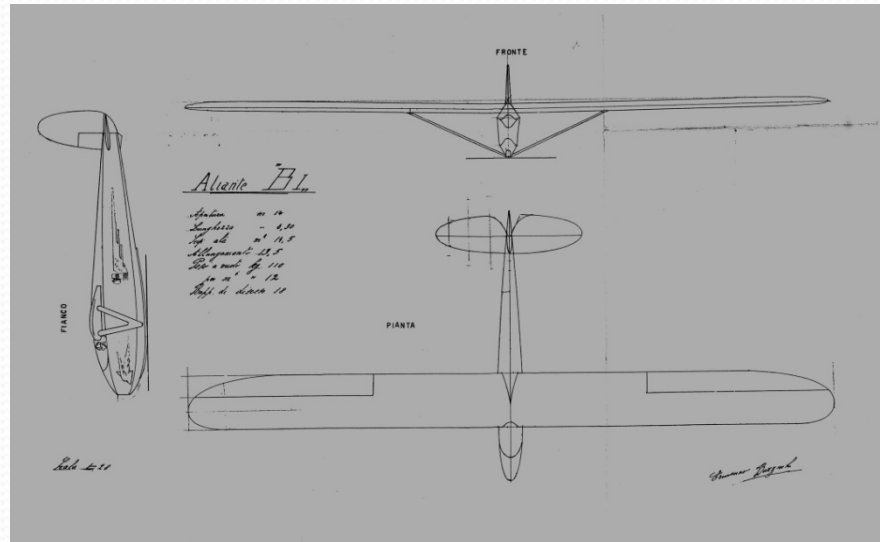
«I went to Milan by bicycle to buy a sheet of 1.5 mm thick plywood, I made a large roll of it to put it on my back and then returned triumphantly to Tradate. With that plywood and poplar strips cut by the carpenter of my village, I began to build the wing ribs. Every day, back from Polytechnic University, I built a rib on the small jig that I had made. Then I started the construction of a hexagonal section fuselage. All this was done in a corner of my dad's laboratory and when it was to assemble the first fuselage skeleton, I took up a part of the kitchen, where my family gathered for meals. The situation became difficult despite my father's sympathy and good will».



Three layout drawings made by Bazzocchi. They are a preliminary study of the EB-1 glider project.



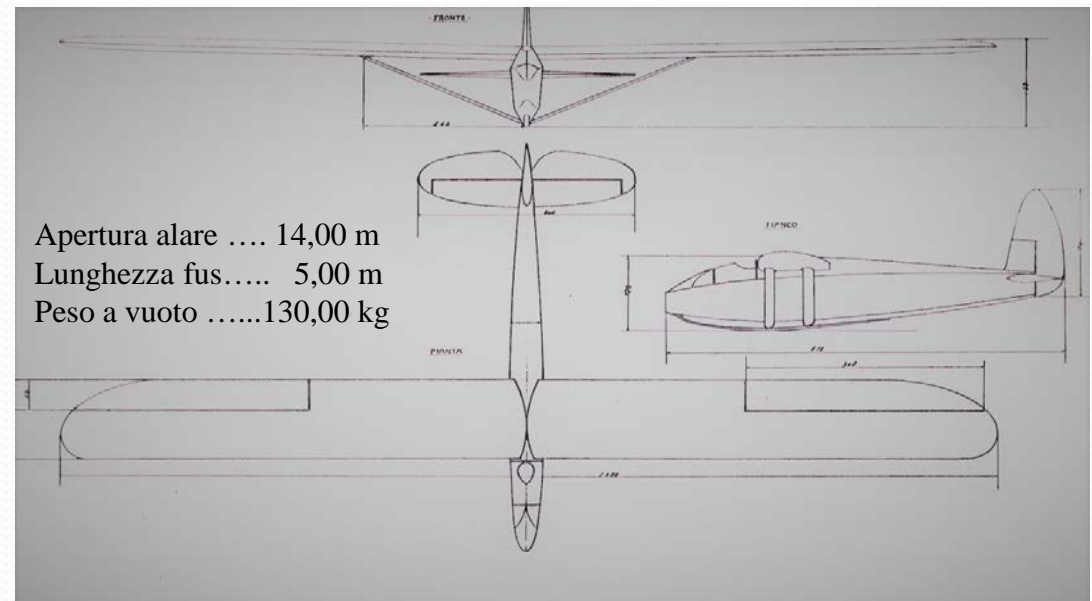
Design and construction of the EB-1 glider



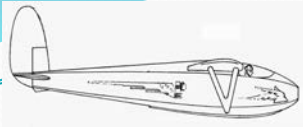
Above: the first autograph three view drawing of the EB-1 with V-braces, which will later be modified

Right: the three-view drawing of the final project

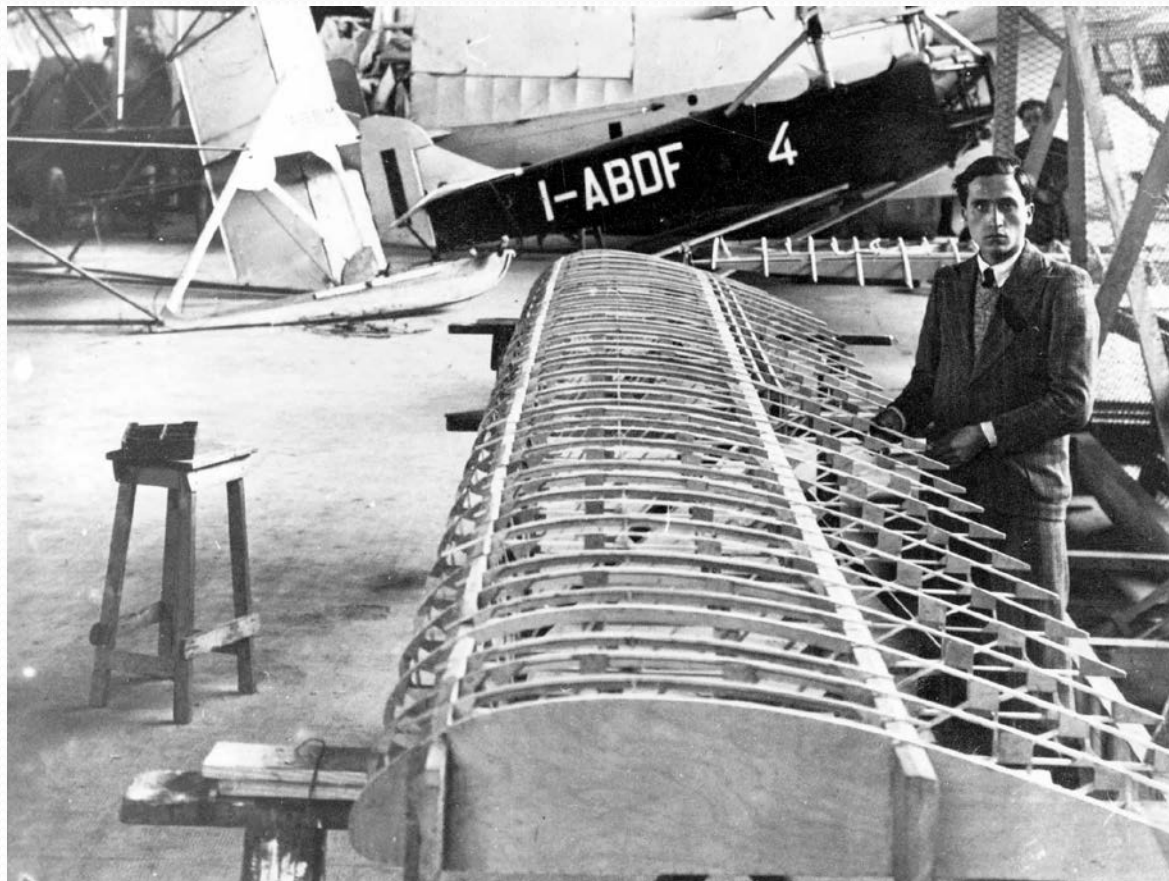
He started building the glider in early 1933, helped, out of mere friendship, by a carpenter from Tradate called "Ul Brughett". The first assemblies were carried out in the kitchen of his house. Then, thanks to the involvement of fellow students, and especially of Filippo Reina of Saronno, the work went on at the Boarding School of Tradate where, the Filavieri team, (Scandolara, Sidoli and Vitali), built the wing ribs. In March 1934, his friend Reina, another Polytechnic student, did his utmost to obtain, from the GUF, the materials and labor needed to complete the glider in time to participate in the 1934 "Littoriali dello sport".



➤ The National University Sport and Culture Championship (called Littoriali) took place in 1934. A particular clause was included in the regulations of the gliding contest: if a G.U.F. participated in the Littoriali with a glider designed and built by students, it would add many extra-points to its score <.

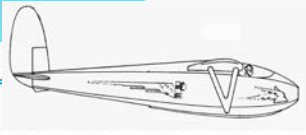


Design and construction of the EB-1 glider



Bazzocchi is checking the nearly completed structure of the right wing. In the background there are a Fiat AS-1 airplane and a Ziegler glider.

«The friends of Milan G.U.F. called me because they knew I was building a glider and they promised me some materials and some labor, if I had been able to complete my glider in time for the races. I got down to work with my classmates day and night. I moved what I had already accomplished to a hangar at Taliedo (Milan) airfield. On the eve of the races I somehow completed my glider. Together with Ravizza and Reina, my classmates, I succeeded in preparing the EB-1 just in time for the contest viz. in May 1934. The necessary materials had been provided by Caproni, SIAI and Breda and the technical support by the Aeronautical Register. I tested the glider in flight once, using elastic cords for the bungee launch: I didn't break my neck. Then we disassembled the glider and transported it to Cantù, where the competitions had to take place. During the night we reassembled the glider and, in the morning, when Starace, the party secretary, arrived, I jumped off the hill that overlooks Cantù and landed on the plain below. The Littoriali were won. The prize was a gold "M" to be worn in the buttonhole, a silver "M" was the second prize and a bronze "M" was the third prize. They were highly coveted distinctive signs ».

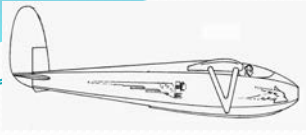


Design and construction of the EB-1 glider



The EB-1 glider featuring a faired cockpit and properly shaped bracing attachments.

The glider did not win, but Bazzocchi finished first thanks to the extra points. At Cantù he received compliments from Captain Umberto Nannini, while on May 12, he was awarded the golden "M" by Mussolini, in Rome. This enterprise was made possible by Bazzocchi's competence and determination and also by the active involvement of other people in his project. He very soon came to realize the importance of collaborations, and this would be a constant feature throughout his professional life. >This attitude was also influenced by his education and involvement in the "Catholic Action", to which he had actively addressed his commitment since the days of high school.



Design and construction of the EB-1 glider

The use of EB-1 and the accident

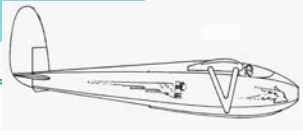
After its success, the EB-1 was likely to be adopted by the gliding schools, but beforehand it had to undergo the required tests to obtain a regular registration.

In June 1934, the G.U.F. of Milan acquired the glider property, through a written agreement with Bazzocchi, Reina and Ravizza, and thus it had to provide all means required for testing and maintenance. By this agreement, Bazzocchi (as the designer) was entitled to receive the glider testing bonus.

In any case, Bazzocchi retained the right to make changes and improvements to the glider. The EB-1 Littore was then named "Liberato de Amici", which was the name given to the Polytechnic CVV, in honor of the friend student, who had died in an accident during the tests for the Littoriali competitions.



A launch from the "Prà Lung" (long field) at Abbiate Guazzone



Design and construction of the EB-1 glider



Bazzocchi is ready for launch

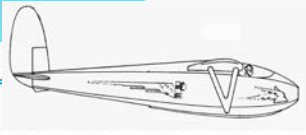
Even if this "accident", had no physical consequences, it was the cause of conflicts and disagreements between the "Dal Molin" Group and the authorities of the fascist youth organizations, to which the gliding schools belonged at that time. The controversial point was the too "autonomous" management of the activity, considered "detrimental to the propaganda", and so, the "Attilio Longoni" school of Milan abruptly requested the return of the elastic cord and any other launch material that had been lent beforehand.

Meanwhile, in the autumn of 1935, Bazzocchi managed to transfer the EB-1 to Tradate, where he could embody some aerodynamic refinements. Besides, with the support of the "Dal Molin" Group, he had the possibility of using it next to home: the launching area was, in fact, a sloped hill near Tradate, at Abbiate Guazzone, with the underlying field called "Prà Lung" (long field).

After one of these launches, he happened to end up on a tree, thus creating a climate of fear and apprehension for his safety.



Bazzocchi on the EB-1 together with his friends Ravizza and Reina.



Design and construction of the EB-1 glider

Therefore, to assert his rights, Bazzocchi wrote a letter to Major Nannini, the head of the national flying organization, who was striving to bring about a full reconciliation with Rovesti's group. Thus, on February 1, 1936, the "Dal Molin" allowed Bazzocchi to carry out his activity at its Vizzola field.

Testing of EB-1

Meanwhile, in September 1935, Bazzocchi was authorized by Dr. Longo to build the glider model and define the polars, necessary for the acceptance tests, in Caproni's wind tunnel.

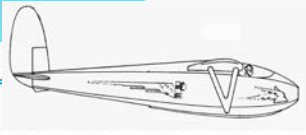


Photo above: the registration of the EB-1 derived from his sister's name.

Photo on opposite side: the EB-1 in a courtyard, (maybe that of Tradate Archiepiscopal Boarding School).



In February 1936 he also made an agreement with Caproni Company to carry out the static tests in its laboratories (a safety factor of 7 and an elasticity of 3.5 were required). These were performed free of charge, and, afterwards, Bazzocchi wrote an appropriate letter, in which he expressed his gratitude to Dr. Gianni Caproni.

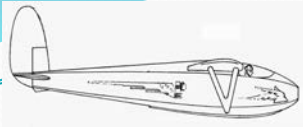


Design and construction of the EB-1 glider

In May 1936, the glider was registered as I-ALDA, a sign of affection for his sister Alda, who had warmly supported his initiatives. Registration was a necessary step to obtain the glider testing bonus mentioned in the "Littoriali" contest regulations. The procedure to receive the glider testing bonus from the Ministry of Aeronautics had begun in late 1936, but was still pending in early 1938 due to bureaucratic delays, which were evidently frequent even at that time. The performed tests had however opened the prospect of producing the EB-1 for the gliding schools. In fact, Nannini (now promoted to wing commander) encouraged him to work out an arrangement with Rovesti for an in-depth evaluation of the glider, for the above purpose. As a result, Rovesti asked Bazzocchi to join his group in the position of engineering manager.



Bazzocchi is landing with his EB-1 (maybe be at Taliedo airport)



Design and construction of the EB-1 glider

IL GIOVINETTO, 1934, p. 154-156

Voło a vela: veleggiatore B 1



Nella scorsa - settimana dell'ala - 2 giorni erano dedicati al volo a vela, e in quella occasione si svolsero delle gare per

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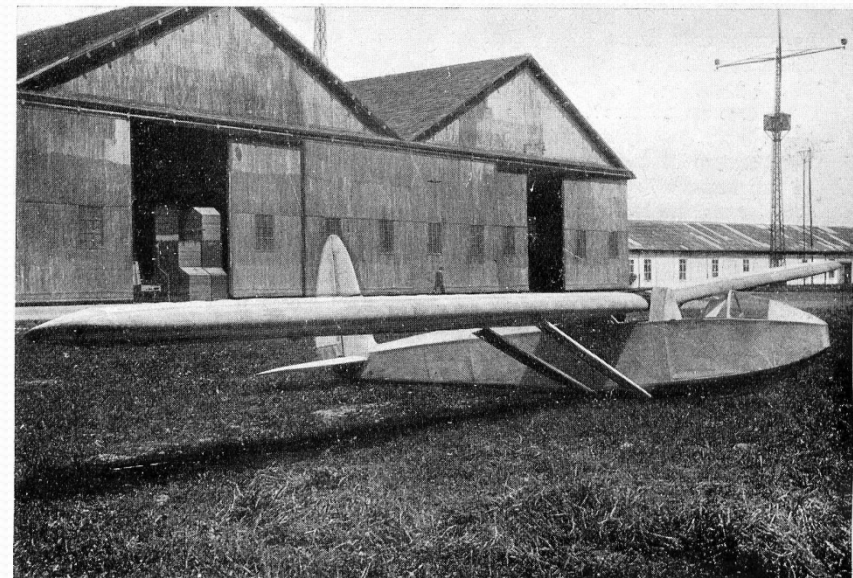
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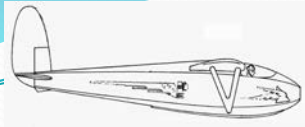
This page and the following ones are a transcript of the article written by Dr. Reina, a Bazzocchi's friend, and published in the paper "Il Giovinetto". It is an interesting description of the first flights of the EB-1, its characteristics, and the feelings of people who had lived those moments.

“During the last Flight Week (Settimana dell’Ala) - two days were dedicated to gliding, and, on that occasion, some glider competitions took place. I remember that I was on the terrace of the F. U. C., when I saw a powered aircraft with a glider in tow that was flying in the direction of “Piazza del Duomo (Milan)”. Over the square, the airplane released the glider and quickly disappeared towards Taliedo airfield. In the sky there was only the glider, with its large characteristic wings that slowly made several turns over the city center, almost without losing altitude, then it moved silently towards the airport, flying along the horizon for a long time, until it disappeared.

It was a demonstration of what gliders could do. In Germany and Poland, where gliding had a longer tradition, far superior successes had been achieved: over 20 hours of uninterrupted glider flight, a record of distance of more than 300 km. A French aircraft had even reached an altitude of more than 2000 meters, using thermal currents. Remarkable results that would soon have practical applications. We have already heard of air trains consisting of a powered aircraft that has more gliders in tow. An article in a magazine envisaged that unpowered aircraft could be commonly used by mountain dwellers to glide down to the city or to the plain, and then go back to their villages after being towed at an appropriate altitude over the city. For the moment, we have heard about it for propaganda purposes, which intend to make the gliding activity popular with the "F.G.C." and the "G.U.F." Their aim is to create an aviation awareness and allow familiarization with piloting maneuvers.

(to be continued on page 23)





Design and construction of the EB-1 glider

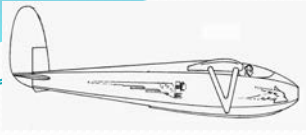
This campaign is supported by the government, and a gliding certificate is considered a good reference in the competitive exams to enter military aviation. I see myself, for the first time at Taliedo, in a cold January, in a large hangar among large cases of disassembled aircraft, where two gliders leaning on a wing were waiting.

The instruction began on the ground, I was sitting on the seat, my feet on the rudder pedal and my hand on the control lever. The instructor said: "when the glider right wing lowers, move the lever to the left, when the left wing lowers, the lever must be moved to the right, when you want to descend push the lever forward, when you want to ascend pull it back toward your stomach." Then the instructor moved to the wing tip and made it oscillate. After picking up the above basics, one was ready to learn how the controls were to be operated, so as to bring the glider back into balance. Finally, the glider, the bungee cords and the stake were brought to the field and flights could be started, viz.: the glider was tied to the stake, the cords were attached to the glider rope pending the order to stretch them. The instructor ordered: "walk" and then the marching steps: "one .. two ... three ... », followed by «run» and finally by « ... go ». The glider was instantly released from the stake and, relying only on the tension of the bungee cord, it dragged along the ground, gained speed, and could fly away. So, it is said by those who have knowledge and are brave, but flying a glider is like this and not like that.

Especially the first time, you get on a glider with a sense of awe, you fasten yourself to the seat with the utmost care, hold the control lever tightly with your hands and also stiffen your feet on the rudder pedals, mentally reviewing the maneuvers and the last instructions. While listening anxiously to the orders: "walk .," "one ... two ... three ...". "run" , you stiffen your back against the seat "... go". You hold your breath and feel you are flying away, then you try to operate some controls, but you are already on the lawn. Height: a span from the ground; length: 20 meters, plus a fair share of emotions. By going on with flights, your emotion becomes less intense, while flight lengths increase. It is normal to reach a length of 50, 70, 100, 200, 300 m, and a height of 2, 5, 15 m. Then there is the test for the pilot certificate: a 30" winch flight and higher parameters: 500 m length and 50 m height. Everyone will more or less experience an accident during glider flights, viz. too low turns, too steep dives from which the aircraft may not recover, or loss of speed. These will result in a broken wing, a damaged glider, and an unharmed pilot. Even in this case, when, after a violent dive from 20 m against the ground, the pilot found himself in a standing position with the skid and the seat between his legs. The wing, detached from the glider by the impact, after flowing over his head, had fallen onto the ground, in front of him, breaking in pieces. The pilot was obviously unharmed.

Nobody knows how the ideas originate and according to Dante no blame should be put on us for the first ideas as they were not conceived by us. The truth is that, one day, the strongminded Ermanno Bazzocchi had an idea: he decided to make a glider, and he made it. About a year ago, he had shown his glider, still in the building phase, to his family. It consisted of square beams, properly planed and bonded so as to form an "N" shaped frame. His glider was the one shown in the drawings and sketches. Then the "workshops" were moved to the Boarding School of Tradate, and, during the winter, the wing ribs were slowly built by the Filavieri team: Scandolara, Sidoli and Vitali.

(to be continued on page 24)

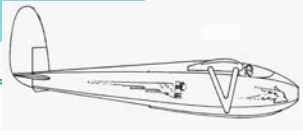


Design and construction of the EB-1 glider

In March, the G. U. F. invited Bazzocchi to speed up the construction of the glider so that it could take part in the “Littoriali” contest, but they also ensured the supply of materials and labor. The glider was moved to Taliedo, and the hangar of the Air Center became the definite construction site. In our spare time, when we did not study, we went from Milan Polytechnic to Taliedo to continue the construction of the glider, or to the Aeronautical Register Office to ask them for advice. But our trips also included the workshops of Caproni, Breda, S.I.A.I, to get some materials, and the shops in Milan where we bought the glue, the plywood, the fabric, and the paints. In the meantime, the glider building was progressing: the spars were made and installed on the wings as well as the ribs. All the above items made up the wing skeleton. At the same time, also the fuselage construction was in progress, this consisted of a central body, the already mentioned “N” shaped frame, to which the wings, the skid, and the fuselage skin were attached. In this way it was not the fuselage that had to carry the wing and the skid, but the “N” shaped frame. This solution allowed the construction to be simplified: another idea of the strongminded Ermanno. Subsequently, it was the turn of the empennage, the plywood covering the wing edges attached to fuselage, and the fabric cover. It was now April, the school year was over and the “Littoriali” were approaching, everyone was in a rush, and most of the time was spent at the airfield.

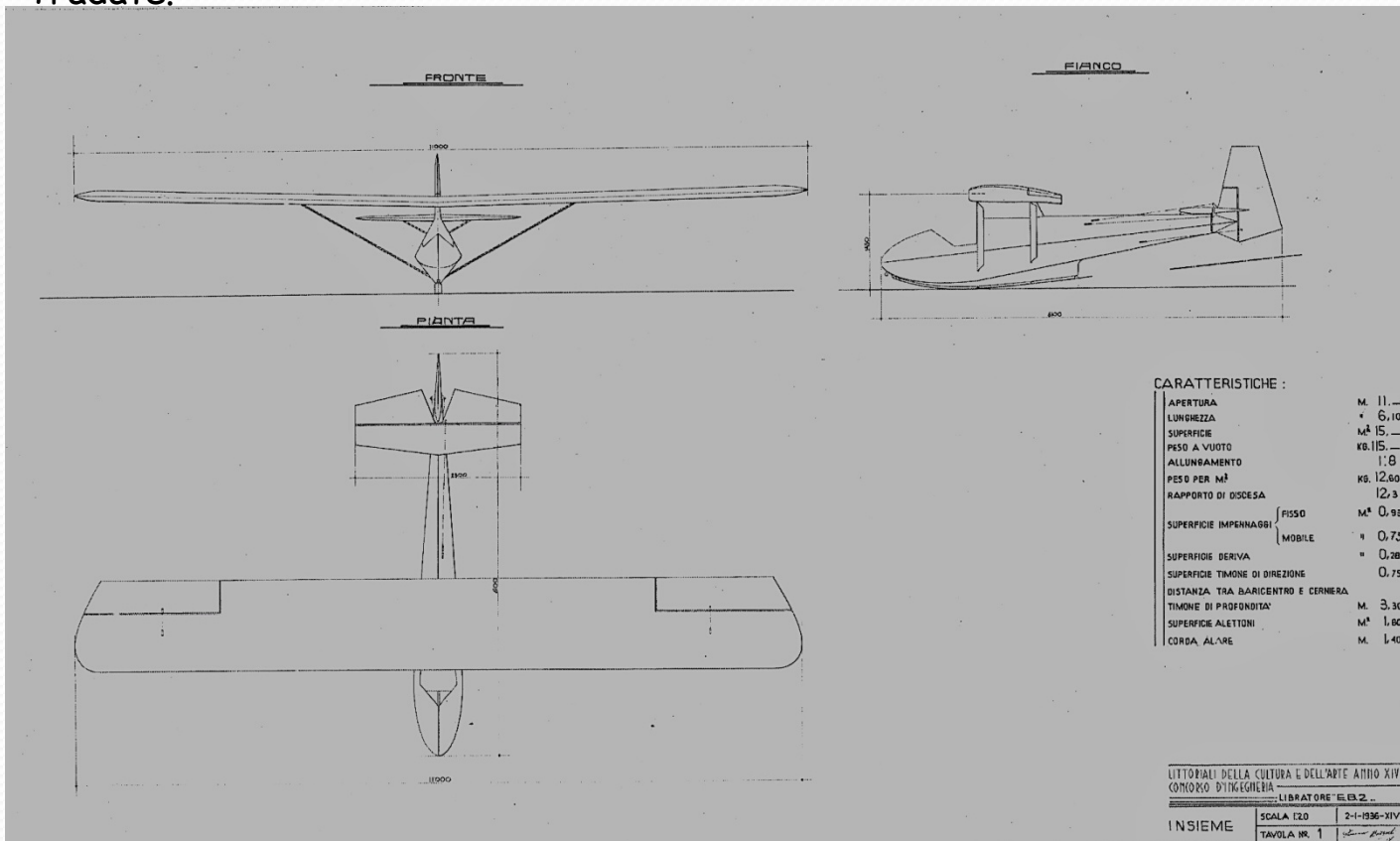
At noon we had lunch with the workers in the shade of the aircraft wings, and then we went immediately back to work. In the last few days, the controls were assembled, and the center of gravity was defined, viz. it was to coincide with the center of pressure of the wing. The final assembly was completed in the last night. We made a short rest for supper, and a snack for two became a meal for three. Then we went back to work, until our beautiful big bird was there, ready for flight, with its white wings extended. I don't remember at what time we stopped working; I only know that even the seat of a fighter seemed a comfortable bed, that night”. And the day after, the glider flew, it was slow at take off because it was heavy on the ground (130 kg), but once in the air, it glided fast and light, and its landing was as smooth as a feather. Thus, the beautiful B-1 glider was born, it featured a 14 m wingspan and a 5 m length. On the same evening, it left for Cantù, and on the next day, the first Sunday of May, Bazzocchi flew it, highly contributing to the victory of Milan G. U. F. Now, to fly again, the EB-1 is to undergo the required tests.“

REINA



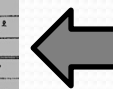
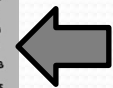
Design and construction of the EB-2 glider

After the victory in the Littorali in 1934, the EB-1, formally owned by the G.U.F, was made available to the "Attilio Longoni" Provincial Gliding School, which released 131 flying certificates in 1934. The project of the EB-2 "glider" dates back to that time. It is possible that Bazzocchi found it difficult to use the EB-1 autonomously, and, before being able to transfer it to Tradate, he wanted to have another glider in its hometown. In fact, on May 10, 1934, the *Prealpina* local news commented on the exploit of the EB-1, and on the intention of setting up an airfield for gliders at Tradate.



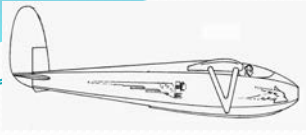
CARATTERISTICHE :

APERTURA	M. 11. —
LUNGHEZZA	" 6,10
SUPERFICIE	M ² 15. —
PESO A VUOTO	KG. 115. —
ALLUNGAMENTO	1:8
PESO PER M ²	KG. 12,60
RAPPORTO DI DISCESA	12,3
SUPERFICIE IMPENNAGGI	{ FISSO M ² 0,93
	{ MOBILE " 0,75
SUPERFICIE DERIVA	" 0,28
SUPERFICIE TIMONE DI DIREZIONE	0,75
DISTANZA TRA BARICENTRO E CERNIERA	M. 3,30
TIMONE DI PROFONDITA'	M ² 1,80
SUPERFICIE ALETTONI	M. 1,40
CORDA ALARE	M. 1,40

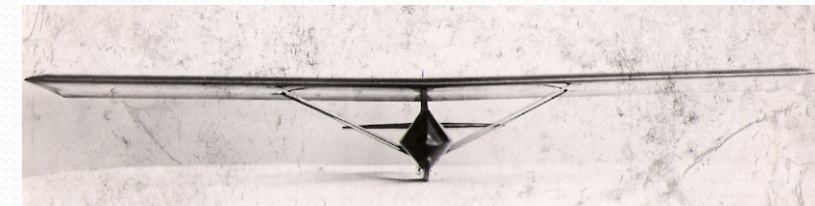
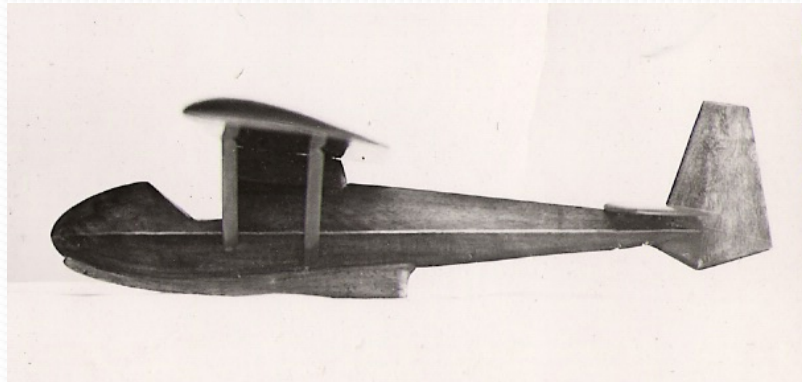
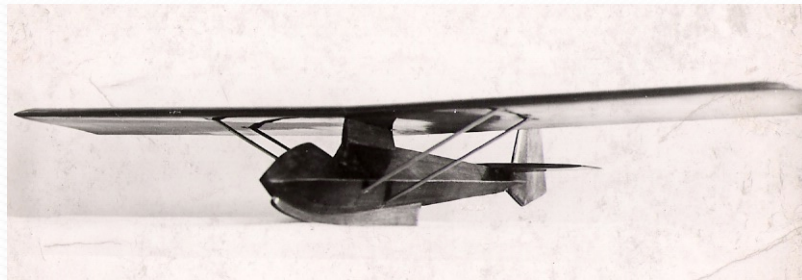


LITTORALI DELLA CULTURA E DELL'ARTE ANNO XIV^a
CONCORSO D'INGEGNERIA
LIBRATORE "EB.2."

INSIEME	SCALA 1:20	2-1-1936-XIV
	TAVOLA NR. 1	



Design and construction of the EB-2 glider



The photos of the EB-2 wind tunnel model.

The engineering drawings and some photographs of the wind tunnel model are all that is left of the EB-2. In 1936 its model was, as usual, tested at Caproni's wind tunnel.

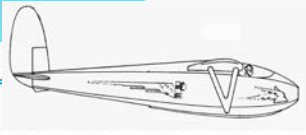
Victory in the Engineering Competition

In 1935, the G.U.F. encouraged Bazzocchi to participate in the Engineering Competition of the "Littoriali" that was to take place in the following year. He decided to submit the EB-1 and EB-2 projects. On February 25, 1936, the newspapers published the competition results: the two projects ranked first and sixth.

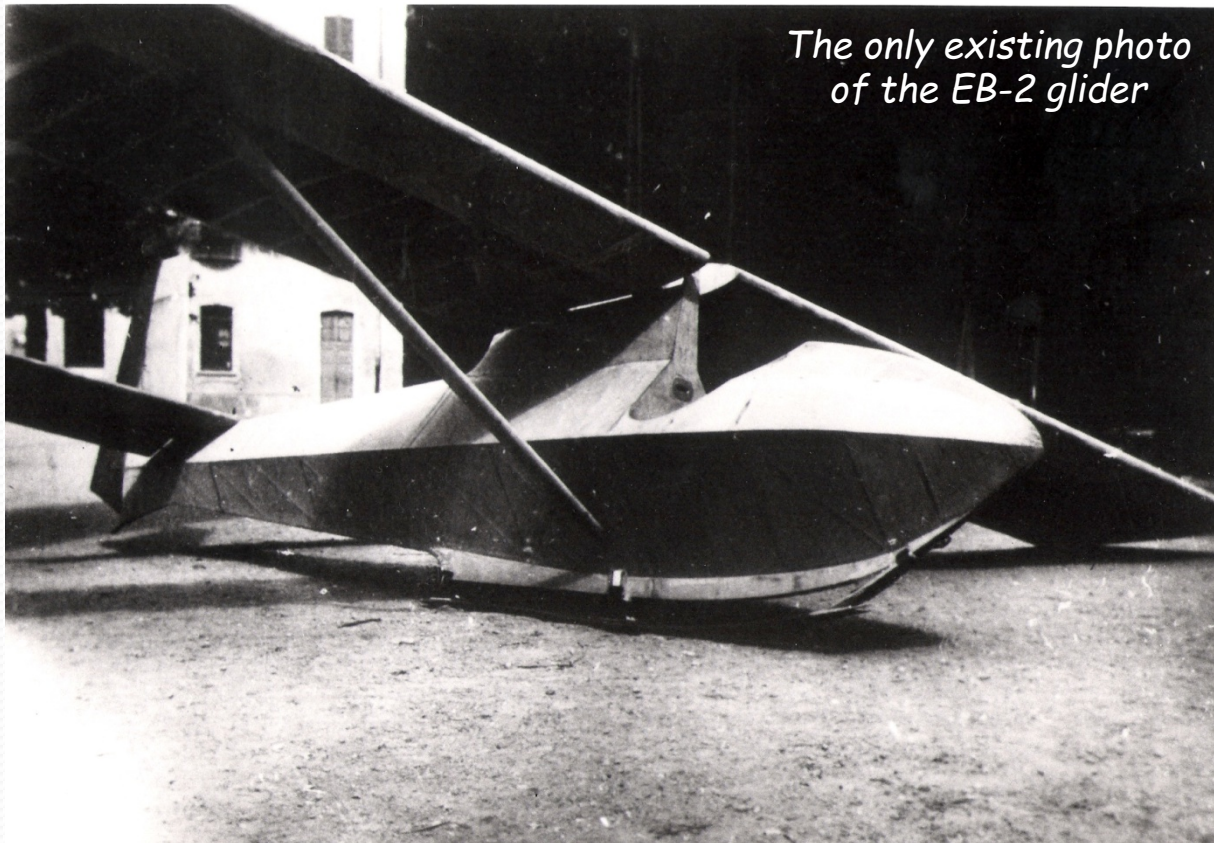
The mystery of the EB-2

Even during the war years, Bazzocchi maintained a close relationship with the Archiepiscopal Boarding School of Tradate, especially with Don Agostino Nagel, a teacher of mathematics and physics, who had been his classmate in the middle school at Saronno. Don Agostino had also created and livened up a glider model school.

Between late 1944 and early 1945, Don Nagel organized a glider model competition at Venegono, involving about twenty students of the school. The models were built with materials obtained with help from the then twelve-year-old Giovanni Caproni. This was the eldest son of Gianni Caproni, he lived there and often visited the group.



Design and construction of the EB-2 glider



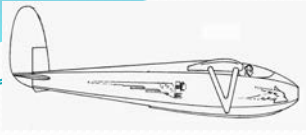
*The only existing photo
of the EB-2 glider*

Obviously, Bazzocchi collaborated in this event, by providing the school with the drawings of the EB-2, the project that had been submitted to the "Littorali" in 1935, (together with those of the EB-1). The EB-2 model had been tested in Caproni's wind tunnel in 1936 and was likely to be built using Caproni's materials.

The students of the Archiepiscopal Boarding School started the construction and then the preparation of the EB-2 model in 1945. They were assisted by Biacchi, a skilled craftsman from Piacenza, who had already worked with Mantelli.

There is only one photograph left of the glider, it shows a different bracing with respect to the tunnel model. After the war, Bazzocchi's commitments prevented him from taking further interest in it and thus today there is no trace of that glider.

The EB-2 marked the end of Bazzocchi's glider projects, but, from then on, his great talent was devoted to a high number of powered aircraft projects for tourism, and for civil or military use. The following page highlights the projects that were turned into flying aircraft.



Ermanno Bazzocchi's aircraft

On these two pages it is worth highlighting Bazzocchi's projects manufactured by AerMacchi or under license (in many countries around the world). They are all identified by the MB initials (M stands for Macchi and B for Bazzocchi). In his long career at AerMacchi, Bazzocchi was also responsible for enhancing the projects of aircraft manufactured by AerMacchi under license such as: DH-100, M-416 and AL-60.



EB-4

Touring aircraft in a "canard" configuration
1st and only flight in 1945
1 prototype was manufactured



MB-308

Touring and training aircraft
1st flight in 1947
182 units were manufactured



MB-320

Executive aircraft
1st flight in 1949
8 units were manufactured



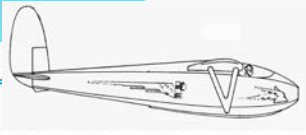
MB-323

Military training aircraft
1st flight in 1952
1 prototype was manufactured



AM-3C (MB-335)

Military reconnaissance aircraft
1st flight in 1967
45 units were manufactured



Ermanno Bazzocchi's aircraft



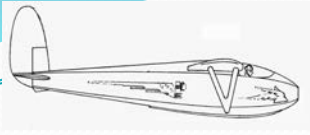
MB-326 and MB-326K (single seat)

- Military training aircraft
- 1st flight in 1957
- Two-seater (7 versions) - 662 units were built
- Single-seater - 100 units were built



MB-339 and MB-339K (single seat)

- Military training aircraft
- 1st flight in 1976
- Two-seater (3 versions) - 236 units were built
- Single-seater - 1 prototype was built



This document



This document was entered in the voloavela.it website of the CSVVA, which also includes a biography of Ermanno Bazzocchi. To access this page click on the following link: <https://www.voloavela.it/biografie/105-ermanno-bazzocchi-1914-2005.html> or, from the "HOME" section, open the "Biographies" sub-page and search for the one related to E. Bazzocchi. This document is also shown on the "Books and Documents" page of the "VINTAGE" section.



In addition to the gratitude expressed to my colleagues in the "Foreword", it is worth underlining that this document could be issued thanks to the commitment of the friends and volunteers of the CSVVA (Center for the Study of Gliding in the Alps), and the members of the GAE (Italian Vintage Gliding Group). They dedicate themselves to the filing and preservation of the historical documents managed by the CSVVA "Museum".
The museum has its own site that is linked to the voloavela.it site from which access will be gained.
Thanks also to Renata Brizi for reviewing the English translation.



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