

TRAIAN VUIA AMONG THE LIMITS OF INTELLIGENCE, PASSION AND OPTIMISM. VUIA ENGINES AND THE AFFINITY FOR THE WIDE FIELD OF AERONAUTICS

Denisa–Ana BALEA

“Henri Coandă” Air Force Academy, Braşov, Romania

DOI: 10.19062/2247-3173.2021.22.20

***Abstract:** Traian Vuia, a complex personality often linked to the father of mechanical flight, was, is and definitely will be one of the most debated names of the huge aeronautical sphere of all times. The path that the inventor chose without hesitation proved to be an axis mundi of his future destiny, which gained wings and, at the same time, gave him wings. Even though they seem to be fairytales, his unstoppable progress and life were sometimes paved with obstacles and slips. However, the symbiosis between the continuous desire to become the best version of himself and the need to make valuable contributions to the aviation field has resulted in his philosophy, which still provides us with remarkable achievements.*

***Keywords:** aeronautics; flight; inventor; patent; perseverance*

1. INTRODUCTION

There were a lot of personalities from different thematic areas that tried to identify a single word that embodied what Traian Vuia was. Inventor, lawyer, aviation passionate, physicist, modest person, son of a priest, Romanian legend or personal developer were just a few of the titles attributed to the one and only Traian Vuia. In this way, the future statement, which belongs to Elie Carafoli, both national and international personality, emphasizes the impact of Vuia’s activity in the aviation field: „the Romanians are among the first peoples of the world to participate in this wonderful manifestation of human intelligence that would definitely lead, in approximately half of a century, to an amazing development of air navigation” (Benea: 1-2).

Regardless of the chosen word or structure, one aspect is definitely seen as a certainty: Traian Vuia was the perfect example of intelligence, real passion, desire to become the best version of himself and continuous optimism.

2. TRAIAN VUIA’S SHORT BIOGRAPHY

2.1 Childhood and aviation as an early passion

Traian Vuia was born on the 17th of August, 1872 in Surducu Mic, a small village located in the south-west of Romania in Caraş Severin county (historia.ro). Over time, Surducu Mic has been given the name Traian Vuia, currently belonging to Timiş county.

The inventor spent the first years of his life in his family, during which he learnt values such as modesty, confidence, honesty, perseverance and last, but not least, faith.

Moreover, the patriarchal environment gave him true life lessons, which further materialized both in his attitudes towards people and in the courage to overcome all the obstacles arising in his way (biblacad.ro). Even though his family's income was modest or sometimes insufficient, Vuia was the supporter of his own dream: to get "wings" and to fly. Since the beginning of his studies, Traian Vuia was seen as an eminent student, fact emphasized by his brilliant mind, agility, perseverance and desire to accomplish more and more objectives.

From a fairly young age, the inventor started to be interested in applied mechanics, any subject related to sciences catching his attention and intriguing him. In addition to this, at the age of 10 Traian Vuia participated in various aviation events, thus becoming passionate about kites and the ways they moved into the wind. Furthermore, the inventor started to analyze them in a detailed manner, thus discovering that they presented a series of aspects that made their handling more difficult than expected (traianvuia.ro).

In this way, the brilliant child managed to change the classic structure of a kite, substantially improving its performance by introducing changes that were never seen before.

2.1 Aviation becomes a latent state

After attending primary and secondary school in Făget and Bujor, Traian Vuia decided, from a purely educational perspective, to leave his hometown and study at the Lugoj High School. Making a comparison between childhood and teenage years, the high school period was the one which offered him the best reason to want more and more from himself; while at the age of ten he wanted to make kites look and act in a perfect manner, high school life made him pay attention to the phenomenon which actually makes keeping them in the air possible. In this way, the future inventor managed to move the framework to different equilibrium conditions and types of forces that act during kites' movements, all of these being guaranteed by his dedicated and intelligent physics and mechanics teachers (Antoniou, Buiu, Hadîrcă, Homescu & Cicoş, 2013: 24-55).

In 1892, Traian Vuia graduated from the Lugoj High School and passed the final exams with very good marks. Since he wanted to stick to the science path, he decided to study mechanics at the Budapest Polytechnic Faculty. Although his goal seemed to take shape every day, financial instability determined Vuia to drop out of college shortly after completing his first year of study. Detached from his passion, the inventor became a law student, fact that allowed him to ensure a decent living by practicing law in famous firms during his spare time. In 1902, Vuia obtained the PhD title in law, fact that emphasized the continuous desire to become the best version of himself.

3. BACK TO WHERE IT ALL BEGAN. AVIATION, THE DREAM THAT CAME TRUE

3.1. Going to Paris and wishing for a change

At the beginning of the 20th century, Vuia came back to Lugoj, where he started to build his first aircraft, the famous *aeroplan-automobil*. Being aware of the huge costs that such a project would entail, he realized that designing the aircraft would not be possible without external support. Hoping that he would find different people interested in his lifetime project, the inventor decided to go to Paris in 1902. After presenting the drawings and the project in miniature, the foreign engineers were not as enthusiastic as expected. In this way, they were very skeptical about the possibility of an aircraft with a higher density than air to fly, fact that resulted in completely rejecting Vuia's idea (Magazin istoric).

Realizing that there was no external support left, the inventor decided to work on his own and to become more and more ambitious. Traian Vuia revised his project and adjusted it in small details, activities which were followed by promoting it as much as possible. Even though his ambition was bigger than expected and he started to construct the aircraft without financial support, he had to stop somewhere on the road. So Vuia asked for help for the second time, but unfortunately the Paris Science Academy did not agree with his point of view.

3.2. The double patent and the Montesson flight

Disappointed by the representatives of one of the most important aviation institutes of the entire world, Traian Vuia made a decision regarding his future objectives: he would not ask for help anymore and he would keep his expectations and ambition level as high as possible. In this way, in 1903 Vuia obtained the aircraft patent, which was commonly known as patent no. 332106, and in 1904 he got another patent, this one related to his first engine (historia.ro).

From 1904 until 1906 the project has been refined and permanently adapted to the needs. On the 18th of March, 1906 Traian Vuia made history: on a field located in Montesson, Paris, the inventor has succeeded in realizing the first flight in the entire history of mankind using an airplane heavier than air and capable of detaching from the ground using its own means. After an acceleration of about 50 meters, the aircraft was able to take-off and fly from approximately 1 meter above the ground. Moreover, the project in its final state has travelled a length of approximately 12 meters, after which it was forced to land due to a problem which occurred at the propeller blades. The international press, especially the British, French, German and American one, brought into attention the success under the auspices of Vuia: the first mechanical flight of the history of mankind (biblacad.ro).

4. LIFE AFTER MONTESSON AND VUIA'S NEW HORIZONS

Despite all the speculation and criticism following the Montesson event, Traian Vuia knew the value of his work and was aware of the fact that the flight was indeed a success (Ucrain & Crăciun, 1986: 14-20).

Seen as a huge step for the worldwide aviation, Vuia's idea led to other successful projects. In this way, he identified the problems which made a longer flight impossible, improved the initial structure of the aircraft and released the updated version of it as soon as possible. Furthermore, he managed to create and build other models of aircraft, which were very appreciated by both national and international aviation personalities.

During the second decade of the 20th century, the inventor focused on projects related to both helicopters and parts of helicopters, especially propellers and rotary wings.

Between 1925 and 1946, Traian Vuia paid attention to engines, especially those which had been already integrated in his models of aircraft and helicopters. In this way, he updated the engines which were already in use and then created new ones. Moreover, he studied in detail steam generators and supported their introduction in various fields such as railway, naval or road transport. The hot air and closed cycle engines, the single acting-cylinder and valve distribution engines and the "Vuia-Yvonneanu" steam engines were among the most popular engines created by Vuia (Antoniou, Buiu, Hadîrcă, Homescu & Cicoş, 2013: 20-22).

Unfortunately, in 1946 Vuia's health condition deteriorated, the inventor being unable to dedicate himself to his lifetime passion anymore.

Moreover, he suffered a severe stroke, after which he was permanently dependent on a person. 4 years later, he came back to Romania, where he was transferred to a nursing home. On the 2nd of September, 1950 Vuia died at the age of 78 and a few days later was buried at the Bellu Cemetery in Bucharest.

His work is still alive and his brilliant and innovative ideas definitely led to various successes in the aviation field. Traian Vuia was, is and will be a pioneer for both the national and international aeronautics.

CONCLUSION

Traian Vuia, engineer, scientist, law PhD, dreamer and modest human being was the example of a multilaterally developed personality. Through his plurivalent creation, the Romanian inventor managed to conquer and aim for peaks that many of his contemporaries did not even dare to dream of. Wanting to end on an atypical note, one of the most popular aphorisms says that: “The people who changed the world were those people the world could not change”.

REFERENCES

- [1]. Academia română, *Academica*. Year XXVI, no. 7-8, 2016;
- [2]. D. Antoniu, I. Buiu, D. Hadîrcă, R. Homescu, G. Cicoş, *Traian Vuia – Viaţa şi opera. His Life and Work*. Bucureşti: Anima, 2013;
- [3]. Fundaţia culturală magazin istoric, *Magazin istoric*. Year VI, no. 8 (65), 1 972;
- [4]. Muzeul banatului montan reşiţa. *Banatica*. Mega, 2019;
- [5]. C. Ucrain, D. Crăciun, *Icarii din Carpaţi*, Craiova: Scrisul Românesc, 1986;
- [6]. B. Benea, *Pionierii aviaţiei româneşti*; Editura Aspera, 2014;
- [7]. V. Dudaş, *Traian Vuia – reprezentant de frunte al aviaţiei mondiale*, Analele Banatului, seria Arheologie-Istorie, 2012;
- [8]. Biblioteca academiei române, *Traian Vuia*. [online]. Available at: <https://biblacad.ro/>;
- [9]. *Inventatorul Traian Vuia*. [online]. Available at: <https://www.traianvuia.ro/>;
- [10] *Românii, pionieri ai aviaţiei: Traian Vuia, Aurel Vlaicu & Henri Coandă*. [online]. Available at: <https://www.historia.ro/>;
- [11] *Traian Vuia – avocatul care a realizat primul zbor autpropulsat din istorie*. [online]. Available at: <https://www.rador.ro/>;
- [12] *Traian Vuia, românul care a inventat primul avion cu care a efectuat primul zbor din istoria omenirii*. [online]. Available at: <https://authenticmagazin.com/>;
- [13] *Traian Vuia*. [online]. Available at: <http://enciclopediaromaniei.ro/>;
- [14] *Traian Vuia*. [online]. Available at: <http://www.itc-cluj.ro/>.