Military Aviation and the Eighties Generation

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Introduction

The men who made up the ruling class in the late nineteenth century, known as the *Eighties Generation,* wanted to convert the Argentine Republic into a modern nation-state and included its armed forces in their scope. In tune with the republic's ideology and modernizing vision, various sectors of the republic, part of or linked to that elite, expressed curiosity about and attraction for the military innovations emerging from the major powers—including those in aviation.

This article discusses the enthusiasm and efforts of the Eighties Generation for incorporating aviation into Argentina's armed forces. These efforts occurred in the context of the presidencies of Dr. Nicolás Avellaneda (1874–80) and Gen Julio A. Roca (1880–86) which, supported by Argentina's government motto Peace and Administration, constituted one of the most important periods of the *Eighties Generation*.

The Country Model of the Eighties Generation

The *Eighties Generation* was the ruling class serving generally in the leadership and organization of the Argentine Republic from 1874 to 1898. This elite built the modern nation-state state and, according to well-defined criteria, designed and developed a country model that endured for decades.

The model was based philosophically on positivism since these leaders sought the country's progress and modernization and its insertion into European civilization; they took Great Britain, France, and Germany as their main references. According to Alejandro Korn, the positivism movement in Argentina was closely linked to

> the economic development of the country, the predominance of material interests, the spread of public education, the incorporation of heterogeneous masses, and the affirmation of individualistic freedom. As a complement, the detachment from the national tradition, the contempt for the abstract principles, the religious indifference, the assimilation of strange uses and ideas are added. Thus, a cosmo-

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> politan civilization was created, with its own characteristics, and no Spanish-speaking country stripped itself, like ours, of their innate character, on the pretext of becoming Europeanised.[1]

The Argentine intellectual, political, economic, and commercial elites oversaw the positivism drive, applying it to many contexts and projecting it across the nation-state.

As an ideology, a positivist, pragmatic, and conservative liberalism prevailed that leading groups incorporated to support and justify their political power and the economic model adopted.[2] In practice, those sectors barely respected the values of political liberalism, but they resolutely responded to the principles of economic liberalism.[3]

The policy acquired a conservative, oligarchic, and aristocratic character wherein power was exercised by a minority centered in Buenos Aires allied with the elites of the interior. Republican forms were maintained and federalism was weakened by Buenos Aires's centralizing political, economic, commercial, and populist action. The masses stayed away from politics, attempts at renewal and openness in political structure and practices were rejected, and a restrictive democracy was created and supervised by predominant sectors.

Economically, Argentina entered the world market according to Great Britain's framework for the international division of work and free trade. An agricultural model based on exports was adopted, especially in relationship to Europe, centering around the export of agricultural and livestock production and import of manufactured and industrial articles. Wealth was promoted through the expansion of agriculture and livestock and the increase of foreign trade with Europe, particularly Great Britain. This process was supported by an important infrastructure modernization program, especially transportation and communications (railways, ports, pipeline works, dredging and beaconing of rivers, bridges, roads, telegraph lines, etc.), made possible by the arrival of significant capital and investments from Europe, mainly Great Britain.

Immigration received an extraordinary boost to expand the economy, agricultural production, and humid farmlands of the pampas and, at the same time, to contribute to the population and colonization of the vast territories recently incorporated into the national patrimony (Patagonia and Chaco). The vast area of the pampas—the foundation of agricultural wealth—was the main territorial supporter of the nation-state for the *Eighties Generation*.

In response to the arrival of large numbers of immigrants (especially Italians and Spaniards), education dissemination deepened and was aimed primarily at forming a national identity favoring scientific, technical, and practical areas. The model sought to ensure unification and national sovereignty over the vast territo-

ries and to resolve conflicts with neighbors by peaceful means, without neglecting the armed forces. These precepts were adopted to exemplify European civilization and were essential to maintain peace, consolidate the modern nation-state, and continue with overall progress.

The country model of the *Eighties Generation* began to show signs of breakdown with the political and electoral reform established by the Sáenz Peña Law (1912). It was cemented with the election of Hipólito Yrigoyen as president in 1916, with two subsequent forceful blows with the First World War and the world crisis of 1929.

Ideological Engines of the Eighties Generation

Positivism was a current of thought dominating Western culture from approximately 1840 until the beginning of the First World War and affected rationalism, empiricism, utilitarianism, evolutionism, and scientism cultural traditions.[4] **Positivism** highlighted the supremacy, power, and stability of science and the methodology of physical-natural disciplines. This focus distanced positivism from theological, metaphysical, and transcendental conceptions and gave it a strong secular character. Positivism even expressed a divine conception of science, infinitely elevated, and the certainty that it was the foundation of individual and collective life as well as the only means of solving human and social problems. It highlighted the relevance of empiricism and pragmatism while promoting the application of the physical-natural sciences method to all areas of knowledge to discover laws, causes, general principles, and universal truths. Positivism granted great importance to the process of industrialization and the advancement of science and technology. This emphasis translated into a feeling of general well-being and great optimism and confidence in achieving political stability.

A particularly prominent feature of positivism was the idea of **progress**.[5] This notion represented a trend promoting the power of man over nature as well as the superiority of scientific and technological development, the study of the physical and natural sciences, and empiricism. It was a concept that was unstoppable, challenging, bold, conquering, dynamic, limitless, and transformative—capable of improving and better organizing society and ensuring hope and happiness for humanity.

Another relevant related concept was that of **innovation**, consisting of introducing something new and useful (ideas, methods, artifacts, techniques, products, goods, services) to achieve improvements or solve problems in a certain area. It included significant, profound modifications to what already existed—leading not only to better and higher returns and values but also to the elimination or modification of established concepts and practices.

The Armed Forces in the Model of the Eighties Generation

The Argentine Republic aimed to maintain peaceful relations with its neighbors and to favor and strengthen ties with Europe (especially Great Britain, France, Germany, and Italy). Its intention was to ensure the fulfillment of the most important aspects of the adopted model: order; stability; modernization; general will to progress; openness to the civilized world; promotion and increase of foreign trade; investment and capital income; settlement of the territory through immigration; and incorporation of scientific, technological and cultural innovations.[6]

The armed forces played a key role in this transformation. They were a manifestation of power and prestige—typical of a nation with aspirations of greatness—as was the case for the world's major powers. For this, it was necessary to have modern military institutions endowed with the latest scientific and technological advances. Furthermore, they were instrumental to secure, consolidate, and defend the country's vast national territory on which much of the country's prosperity was based. Additionally, the military fundamentally influenced the traditional and historical conflict potential with Chile and Brazil.

During 1880–1886, the great European powers (Great Britain, France, Germany, Russia), other actors of influence (Austria-Hungary, Italy, Belgium), and those emerging new powers (US and Japan) all strove to display their military, industrial, scientific, and technological power; economic and commercial prosperity; and prestige and cultural advancement. They made positivism and the idea of progress the philosophical pillars on which they built, increased, and perfected their power. All the elements comprising that display of power, prosperity, and prestige were presented to the rest of the world as a true civilization and as the parameters that awarded a country its level as a world power.

The Argentine Republic devoted itself to strengthening its military institutions in response to modernization, progress, and civilization that guided and shaped national aspirations. Positivism and progress were key philosophical manifestations and greatly influenced defense policy. The armed forces, modern and up to date in science and technology, reflected the European trend that the Argentine elite applied in their efforts to convert Argentina into a civilized, modern, progressive, and powerful nation.

The preoccupation to have the most militarily advanced science and technology (arms, transport, communications, etc.) coincided with the modernizing spirit of the *Eighties Generation*. Thus, the concept of innovation was essential to highlight the incorporation of new developments into the armed forces. Additionally, leaders initiated the modernization of the Argentine military structure to protect the

country's national territorial patrimony, enhance deterrence, and more effectively employ the armed forces in the event of an external armed conflict (Chile, Brazil).

Military Aviation: An Attractive Innovation forthe Eighties Generation

Positivism and the idea of progress were fundamental philosophical pillars that supported and justified the development of aviation and its military application. During the second half of the nineteenth century, world powers conducted research in physics, chemistry, and electricity, allowing improvements in mechanics and machining and developments of innovations in these areas and industry in general.

The development of aerial devices (balloons, airships, *cerfs-volants* or kites, and later airplanes) was in the context of the industrialization process of the major European countries and the US, so closely linked to the advancement of science and technological innovations. That is why the phenomenon of aviation is considered a product of industrialization, an expression of the irresistible power of the most modern science and technology, and a manifestation of the indisputable superiority of Western civilization. Aerial means were just innovations introduced in the war to improve the conduct of operations and the methods and elements of combat.

Due to the positivist concept of the divine character of science, aviation represented a challenge to the existence of a transcendent being and to faith in providence. Aviation introduced an implication that it originated from the creative genius, audacity, and adventurous spirit of man to rebel and to overcome the limits of airspace and penetrate the dominions of God. The great altitudes, closeness to the sky, and all of aviation's supernatural connotations made it incredibly attractive.

The idea of air as a new geographical space for conquest and domination emerged in the era of imperialism and overseas exploration prior to the First World War. The conquest of the air was a fundamental aspect of the control of nature. The expansion of the West to overseas territories (Africa, Asia) was for the purposes of acquiring or even disputing spaces previously considered unredeemed or under the dominion of mystical supernatural forces. These geographical explorations of lesser-known continents extended to the unlimited heights of airspace.

A country that considered itself civilized and on its way to progress needed to possess modern armed forces since they granted its power or position in the international arena. Being characterized as modern was associated with, for example, developing scientific and technological innovations and having diverse aerial capabilities.

Positivist discourse and references to progress appeared frequently whenever military aviation issues were discussed. As was the case for the major powers of

Europe and the US, positivism and progress in the Argentine Republic constituted key philosophical support that explained the curiosity about and attraction to the elements of aviation and that justified the possibility of incorporating these artifacts in the armed forces. To keep Argentina in line with progress and civilization, according to the European model, it was obligatory to know the news about what was happening across Europe—including in aviation.

In the Argentine Republic, the development of aviation and other military innovations was the responsibility of institutions such as the Ministry of War and Navy; those in military circles; and members of the intellectual, political, and civil social elite.[7] This environment, in which there were figures linked to the *Eighties Generation*, gave rise to curiosity about the phenomenon of aviation as a unique, innovative application that could establish the armed forces' level of importance and distinguish the capabilities of one institution over another.[8]

Two Argentine military publications promoting knowledge about aviation between 1880 and 1886 were *Revista Militar y Naval* (*Military and Naval Journal*) and *Revista del Club Naval y Militar* (*Journal of the Naval and Military Club*). They were powerful instruments in spreading the principles of positivism and progress in the armed forces and inculcating scientific and technological innovations issues in their ranks.

The inaugural edition of *Revista Militar y Naval*, edited by the Ministry of War and Navy, was published in January 1880. Its stated vision and purpose reflected its positivist character to:

> "propagate . . . the daily **advances and improvements** of military and naval science,9 and constantly reveal all the **progress of military art**, which may influence the effective development of our sea and land forces, so necessary to maintain the wealth of our land and to advantageously resolve political complications in the future" (emphasis added).[10]

The journal emphasized the need to maintain and deepen ties with Europe as a natural reference point for Argentina and because most important military developments were occurring there.[11] Thus, the *Eighties Generation* expressed its initiative to incorporate Argentina into the list of nations that, according to its criteria, constituted true civilization: "We are also included in the circle of external relationships, which constitute ***civilized peoples***, and we have to maintain a proportional level of action and behavior with all of them" (emphasis added).[12]

On the other hand, the *Revista del Club Naval y Militar, first published in 1884,* was part of the institution of the same name (currently the Military Circle of the Argentine Army). Army second lieutenant Juan Antonio Mendoza, director of the publication, included expressions of profound positivist content in the intro-

duction of the first issue and highlighted the strength and power of science.[13] He remarked,

> "The hour that marks **scientific or philosophical truth** has signaled a new **course for humanity**, showing it more clear and correct horizons. The mysterious, the fictitious, the irrational, tend to disappear as science penetrates the popular masses, being the reactive that dissolves the precipitate of ignorance, that clouds human actions, and teaches man the **laws of nature** so little known" (emphasis added).[14]

Coinciding with the modernizing spirit of the *Eighties Generation* in matters of the armed forces, Lieutenant Mendoza posed strong queries about Argentine officers:

> "Was it possible that the military man was detached [from]. .. any idea of progress, remaining impassive to the intellectual movement [and] that in a nation with such a glorious past and such a great future, the military. .. would not feel encouraged by an innovative and progressive spirit (emphasis added)?"[15]

The publications included translations of papers and excerpts of information on military aviation from journals and news media from Great Britain, France, Germany, and the US. These included the Times, Illustrated London News, Engineer, Daily News, Broad Arrow, *Revue des Deux Mondes (*Review of the Two Worlds*)*, Technologist, Aeronaut, *Militär-Wochenblatt (*Military Weekly), *Allgemeine Militär-zeitung (*General Military Newspaper), and Army and Navy Journal, among others.

The use of these sources demonstrate great interest in what the European powers were doing. In some cases, the translations were accompanied by brief opinions from the Argentine military and civilians. For example, in 1881 an Argentine commentator presenting a compilation work from Anglo-Saxon sources entitled "The Use of Balloons in War" stated, "We believe that the reproduction of some data brought by the American and English newspapers on this matter is of importance, ***because such matters may have many applications in the army of the Argentine Republic***" (emphasis added).[16] While the *Eighties Generation* organized the modern nation-state, those Argentine journals published exotic aviation studies and experiments that were especially developed in Europe: types of air machines; the direction and propulsion of aerostats; air bombardment and photography; use of artillery and machine gun fire against aerostats (especially in Great Britain and Germany); application of telegraphy in aviation; the invention of artifacts and weapons; organization, instructional, and logistical issues; evaluation of the use of aerial means; and a review of the origin, development, and military use of aerostats in history.

Great Britain and France seemed to be the most advanced in terms of military aviation during this period. Germany, meanwhile, seemed a bit further behind in the development of aerostats, though it was focused on conducting artillery tests and communications linked to ballooning. Among the topics these publications addressed, Great Britain's use of balloons in war was particularly highlighted. A distinction was made between free and captive balloons and their respective applications, the recognition of enemy positions, and communication between areas under siege and the rest of the territory. One of the main concerns was to define the organization of a permanent service of military balloons that would be run by a contingent of British Army engineer officers. These publications also described various complex experiments: tests to obtain hydrogen destined to inflate balloons, ground transportation of aerostats in special vehicles, and air communications by means of telephone and signal flags, for example. References for flights in military maneuvers and demonstrations were included.[17]

The *Revista Militar y Naval* published a translation of a lecture on "Telegraphy in Modern Wars" by a captain of the Prussian Army's railroad regiment in which he referenced an air station for this purpose.[18] The speaker, among the various topics addressed, pointed to examples of the use of aerostats in different wars (American Civil War, Triple Alliance, Franco-Prussian) and their multiple applications (reconnaissance, aerial photography). He noted that, after the Franco-Prussian War (1870–71), France and Great Britain began to make serious and continuous efforts to create and organize permanent military ballooning services. That same publication also included news about German Army aerial photography trials.[19]

Lieutenant Mendoza contributed extensively to the compilation of works from European sources on the background and developments of aviation, especially in France. Given the curiosity generated by the topic, he reported that "from now on we will inform the readers of this journal on the progress and tests being done on electric airships."[20]

The emphasis that European powers were placing on the development of aviation technology was displayed in the predominance of engineering officers in the operations and administration of their aviation units. The great influence of positivism also contributed to this technology focus.[21] In Great Britain and France, for example, it was their engineering officers who were most frequently called upon to get training in aerostats.[22]

The spirit of the time in Argentina from 1880 to 1886 allows a comparison between the curiosity and attraction generated by the **exotic air machines** that the European powers owned and experimented with (and that could be acquired at some point for the armed forces) and an innovation that the Navy incorporated in 1881: the **battleship or armored *Admiral Brown***. It was ordered from a shipyard in

Great Britain to be built especially for Argentina, equipped with the latest technology: Argentina's first truly seaworthy warship.[23] The European aerostats and the battleship represented, for the modernizing *Eighties Generation* country model, two clear manifestations of scientific and technological innovation in the military field needed to contribute to the modernization of the national military institutions.

Conclusion

The dominant thought in Europe and the US since the second half of the nineteenth century contributed to the evolution of aviation and explained the interest of other countries in incorporating aviation into military institutions. That thought was characterized by the hegemony of positivism and the idea of progress. Aerial capabilities were true expressions of the most modern scientific, technological, and industrial development. They were exotic and exclusive elements, fashionable at the time and typical of nations that were powerful or with some degree of prominence or influence on the world stage. The importance of having knowledge and/or possession of those innovative devices meant, no more and no less, than entrance into the select group of civilized countries with world power.

The principles of positivism and progress influenced curiosity about and attraction to military aviation in Argentina, as was the norm among world powers. The pursuit of information about military aviation and the possibility of acquiring aircraft constituted novel quests.

For the armed forces of the *Eighties Generation*, aviation represented an innovation since these devices, constantly improving, constituted authentic manifestations of the most state-of-the-art application of science and technology in the military field. Consequently, aircraft became essential elements highlighting modern, powerful military institutions typical of a civilized, progressive nation with aspirations to be included in the list of world powers.

The Eighties Generation was coherent in its vision that aviation would provide Argentine military institutions with the latest science and warfare technology. The realization of this goal was essential to granting the country a higher status and the possibility of bringing it closer to the most powerful institutions in the world.

The affinity that the Eighties Generation had for military aviation had a rather intellectual and informative character, but it expressed the coherence of the ruling class's modernization intent to be abreast of what was happening on a daily basis in the world of military thought. Military aviation was a true symbol of positivism and progress. This innovation contributed to a defense policy generally consistent with the *Eighties Generation's* goals through the dissemination of knowledge of the latest developments applied to modern warfare, such as aerial machines. ❑

Notes

1. Alejandro Korn, "Philosophical Influences in the National Evolution," *Argentine Thought*, 1961, 169.

2. Juan Fernando Segovia, "El liberalismo argentino de la Generación del Ochenta. Coincidencias y diferencias ideológicas" ("The Argentine Liberalism of the *Eighties Generation*. Coincidences and Ideological Differences"), in *History and Evolution of Argentine Political and Philosophical Ideas* (Córdoba: National Academy of Law and Social Sciences of Córdoba, 2000).

3. Carlos A. Floria and César García Belsunce, *Historia de los argentinos* (*History of the Argentines*), vol. 2 (Buenos Aires: Larousse, 1992), 167–68.

4. Giovanni Reale and Dario Antiseri, *Historia del pensamiento filosófico y científico* (*History of Philosophical and Scientific Thought*), 2d ed., vol. 3 (Barcelona: Editorial Herder, 1992), 271–73.

5. John Bury, *La idea del progreso* (*The Idea of Progress*) (Madrid: Alianza Editorial, 1971), prologue, introduction, chaps. 16–19, and epilogue.

6. Beatriz S. Solveira, "La política internacional: relaciones exteriores y cuestiones limítrofes (1862–1914)" ("International Politics: Foreign Relations and Border Issues (1862–1914"), in National Academy of History, *New History of the Argentine Nation*, vol. 5 (Buenos Aires: Planeta, 2000), 209–14.

7. In 1876 Elías O´Donell (or O´Donnell) presented a study on aviation for the faculty of physical-natural sciences of the University of Buenos Aires, and in 1878 Dr. Guillermo Rawson published his observations on the flight of the condors in the Andes mountain range. That research had a civil orientation. Antonio M. Biedma Recalde, *Historical Chronicle of Argentine Aeronautics*, vol. 1 (Buenos Aires: Círculo de Aeronáutica, 1969), 72–73. https://www.biblio./combook/cronica-historica-aeronautica-argentina-2-tomos/d/832915113.

8. During the second half of the nineteenth century, various shows with aerostats were performed in Argentina; in the war of the Triple Alliance (1865–70), the Brazilian imperial army used captive balloons for observation. Recalde, 73–76.

9. "Program," *Military and Naval Journal* 1, no. 1 (January 15, 1880): 1.

10. Of particular interest is this article's attention to the importance of defending the national territory—especially the humid pampa (base of the export agricultural scheme)—and discussion of the hypotheses of conflict. Emphasized text is in reference to Argentina.

11. In Europe *is where the most important field of observation is for the study of military science. As we are a new people*, **we are bound to follow closely all the inventions and applications that are made there . . .** Ibidem, P.1. Emphasized text is in reference to Argentina.

12. "Ibidem, P. 1." Emphasized text is in reference to Argentina.

13. Lieutenant Mendoza stated, "The readers of the journal will not find. .. in-depth studies on military science, since the state of our army does not allow it yet, but they will find the opinion of the members of this association. .. [and] translations of important works written in Europe and North America." 2d Lt Juan Antonio Mendoza, US Army, "Introduction," *Journal of the Naval and Military Club* 1, no. 1 (June 1884): 7.

14. Mendoza, 1. Mendoza pointed out that the members of the club were lovers of the truth seeking the light to illuminate the consciences that were still dark, that is to say, officers who adhered to positivism and progress (Mendoza, 3). Emphasized text is in reference to Argentina.

15. Mendoza, 2–3. Emphasized text is in reference to Argentina..

16. "El uso de los globos en la guerra" ("The Use of Balloons in War"), *Military and Naval Journal* 2, no. 5 (May 15, 1881): 138. Emphasized text is in reference to Argentina..

17. "El uso de los globos," 138–41. The compiler and commentator (unidentified Argentine author) noted, "In this state is the issue of military ballooning. The progress he makes from day to day will soon provide him with a satisfactory solution, and will then become an important branch of modern military art. We will do everything possible to keep our readers informed of the advances of this science." "El uso de los globos," 141.

18. Buchholtz, "La telegrafía en las guerras modernas" ("Telegraphy in Modern Wars"), *Military and Naval Journal* 3, no. 7 (July 15, 1882): 208–10.

19. "Various News. Use of Aerostats and Photographic Devices to Take Views of the Land," *Military and Naval Journal* 4, nos. 7–12, (July–December 1883): 231–32.

20. J. A. Mendoza, "La Navegación Aérea" (conclusión) ("Aviation" [conclusion]), *Journal of the Naval and Military Club* 2, no. 9 (February 1885): 92.

21. This is how it is understood why Jorge Alejandro Newbery (1875–1914), an electrical engineer with a scientific background strongly influenced by positivism and progress, was an important architect of Argentine aeronautics.

22. "Various News. Balloons in War," *Military and Naval Review* 1, no. 12 (December 15, 1880): 192; and "Various News. England: Military Aerostation," *Military and Naval Review* 2, no. 1 (January 15, 1881): 29.

23. This warship is the pillar of modern oceanic naval power and considered the founding unit of the Argentine Sea Fleet.

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