

Review

# China Launches Its First Passenger Aircraft

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**Abstract:** C919, the passenger plane developed by China within a national project, was successfully launched at the inauguration of its flight. After a series of long delays, this is only the first step by which China is trying to penetrate the international aviation market. C919, developed and produced by Aircraft Corp. or COMAC in brief, was initially scheduled to be prepared in 2012 with its first flight in 2016. Despite these delays, COMAC will be a serious competitor in the future for the leaders of the Boeing and Airbus civil aviation market, given that C919 will be up to 50% lower than the models produced by American and European competitors. This first model of the airplane, still under test, was taken off from Shanghai Pudong Airport, the event being broadcast live by the media in the Chinese state. The latter declared the success of this project as a reason for national pride, only six other countries in the world have managed to produce a line plane of this size, especially in the context in which just days ago China launched the first the aircraft produced entirely on the domestic market. China's ambition to develop its own civil aviation industry dates back to the 1970s when Mao Zedong's wife, Jiang Qing, supported the personal development of this sector. "A strong country must have its own passenger plane. China's commercial aviation industry cannot depend entirely on imports," said Li Jiaxiang, the head of China's civil aviation authority. Between 150 and 170 passenger seats, C919 will be a competitor for Boeing 737 and Airbus 320. Incorporating a state-of-the-art engine, specialists in the field believe the C919 is comparable as their competitors. The plane is not fully developed in China, the engine, electronics, wheels, brakes and many other components being manufactured mainly in Europe and the United States. Airplane price is announced to be about 500 million dollars, with about 100 million dollars below the price of the catalog of its competitors. Price differences may, however, increase in the case of large orders. Chinese media announced that there are already orders for 570 C919 devices from Chinese aviation companies. It is estimated that the global civil aviation market will total \$ 2 trillion in the next 20 years. Boeing estimates that just to cope with the domestic market, Chinese airlines will have to acquire over 6,000 passenger planes of different sizes, the cost of which is close to 1 trillion dollars. The next step for the C919 to enter the global market will be the required certificates from American and European agencies, the FAA and EASA, which regulate the commercial aviation sector. Qatar Airways CEO Akbar Al Baker said shortly afterward that "there is no hesitation in a plane made in China, as long as they are built to a certain standard. There is nothing wrong with buying China-made products, but we are using China-made iPhone designed by someone else but manufactured in China. I think it will be good if this monopoly (Boeing/Airbus) is broken" he added this.

**Keywords:** China, China Aircraft Corp, China First Passenger Aircraft

## Introduction

The People's Republic of China is an independent state located in East Asia. It is the most populous country in the

world, with a population of over 1,350,000,000. China has a unit system, led by the Chinese Communist Party, having its headquarters in the capital city of Beijing. It exercises jurisdiction over 22 provinces, five autonomous

regions, four central sub-municipalities (Beijing, Tianjin, Shanghai and Chongqing) and two special administrative regions, largely self-governing (Hong Kong and Macao). The PRC also claims Taiwan, as the province's twenty-third, which is currently controlled by a separate political entity, the Republic of China (RC); a controversial claim due to Taiwan's complex political status.

Covering approximately 9.6 million km<sup>2</sup>, China is the size of the land area of the second country in the world and the third/fourth country by total area, according to the measurement method. China's landscape is vast and diverse, ranging from steppes and deserts, such as Gobi and Taklamakan, from the northern arid to the subtropical wetlands of the south. Mountain chains such as the Himalayas, Karakoram, Pamir and the Tian Shan separate China from the South and the Center of Asia. The Yangtze and Galben, as the third and seventh lengths of the world, flow from the Tibetan plateau to the densely populated east coast. China's coast, along with the Pacific Ocean, is 14,500 km long and is bordered by the seas of Bohai, Yellow, East China and South China.

China's history begins from the ancient civilization era - one of the oldest in the world - that has flourished in the fertile basin of the Yellow River in the North China Plain. For millennia, China's political system has been based on the hereditary monarchs, known as the Dynasties, starting with Semi-Semitic Xia, in the Yellow River Basin (about 2000 BC). Since the year 221 BC, when the Qin Dynasty conquered a number of states, to form a Chinese empire, the country has expanded, divided and reunified several times. The Republic of China (1912-1949) (RC) overthrew the last dynasty in 1911 and drove mainland China until 1949. After the defeat of the Japanese Empire in the Second World War, the Communist Party defeated the Kuomintang nationalists in mainland China and proclaimed the People's Republic of China in Beijing on October 1, 1949, while the Kuomintang moved the RC government to the current capital, Taipei.

Since the introduction of economic reforms in 1978, China has become one of the world's largest economies with the fastest growing economic growth. In 2013, it was the second largest economy in the world, with both total nominal GDP and purchasing power parity (PPP) and is also the world's largest exporter and importer of goods. China is one of the nuclear-weapon countries and has the largest permanent army, with the world's second-largest budget ever-defense-minded. The PRC is a member of the United Nations since 1971 when it replaced RC as a permanent member of the UN Security Council. China is also a member of numerous formal and informal multilateral organizations, including the WTO, APEC, BRICS, the Shanghai Cooperation Organization, the BCIM and the G-20. China is a regional power in Asia and has been characterized as a potential superpower by a number of analysts.

The People's Republic of China is the second largest country in the world, by dry area, following Russia and is third, or fourth, the largest total area after Russia, Canada and, depending on the way of calculation, the United States of America. In general, China's total area is estimated to be about 9,600,000 km<sup>2</sup>. The figures range from 9,572,900 km<sup>2</sup>, according to the Britannica Encyclopedia, 9,596,961 km<sup>2</sup>, according to the UN Demographic Yearbook, at 9,596,961 km<sup>2</sup>, according to the CIA World Factbook. China has the longest land border in the world, 22,117 km, from the sinking of the Yalu River to the Tonkin Bay. China is bordered by 14 nations, more than any other country, except for Russia, which is also bordering 14 states. China extends largely from East Asia, bordering Vietnam, Laos, Burma in Southeast Asia; with India, Bhutan, Nepal and Pakistan in South Asia [e]; with Afghanistan, Tajikistan, Kyrgyzstan and Kazakhstan in Central Asia; with Russia, Mongolia, North Korea in North and Northeast Asia. In addition, China divides maritime borders with South Korea, Japan, Vietnam, the Philippines and Taiwan.

China's territory lies between latitudes 18° and 54°N and between 73° and 135°E longitude. China's landscapes vary widely across the vast territory. In the east, along the shores of the Yellow Sea and the East China Sea are extensive and densely populated alluvial plains, while on the edges of the Inner Mongolia Plate, in the north, large meadows prevail. South China is dominated by hills and low mountain ranges, while the central-eastern part hosts the delta of two major rivers of China, Yellow and the Yangtze. Other major waters include Xi, Mekong, Brahmaputra and Amur. To the west are important mountain ranges, especially the Himalayas. High plateaus show arid landscapes in the north, such as the Taklamakan and Gobi deserts. The highest point in the world, Mount Everest (8848 m), is on the Sino-Nepalese border. The lowest point of the country and the third in the world is the bottom of Ayden's (playa) lake (-154 m) in the Turpan Depression.

China's climate is predominantly dominated by dry seasons and wet monsoons, which lead to significant temperature differences between winter and summer. In the winter, the Nordic winds, coming from higher latitudes, are cold and dry; In summer, the southern winds in the coastal latitudes of the lower latitudes are warm and humid. China's climate differs from one region to another because of its vast territory and complex topography. A major environmental problem in China is the continued expansion of its deserts, especially the Gobi Desert. Although the trees-barrier lines planted in 1970 have reduced the frequency of sand storms, prolonged drought and erroneous agricultural practices have caused dust storms that affect northern China every spring, parts of East Asia, including Korea and Japan. According to the China Environmental Protection Ministry, SEPA, China loses 4,000 km<sup>2</sup> per year due to desertification. Water

quality, erosion and pollution control have become important issues in China's relations with other countries. Melting glaciers in the Himalayas could lead to water shortages for hundreds of millions of people.

China is one of the 17 megadiverse countries, is located in two of the major ecological areas of the world: Palearctic and Indomalaya. According to an estimate, China has over 34,687 species of animals and vascular plants, making it the third most biodiverse in the world after Brazil and Colombia. The country signed the Rio de Janeiro Convention on Biological Diversity on 11 June 1992 and became a party to the Convention on 5 January 1993 and later a National Biodiversity Strategy and Action Plan with a review, which was accepted by the Convention on 21 September 2010.

China is the home of at least 551 mammalian species (ranked No. 3 in the world); 1221 species of birds (eighth on Terra); 424 reptile species (7th place) and 333 amphibian species (7th place on the globe). China is the country outside the tropics with the highest biodiversity. China's wildlife divides its habitat and carries the acute pressure of the world's largest homo sapiens population. At least 840 species of animals are threatened, vulnerable or in danger of extinction at a local level in China, mainly due to anthropogenic activities such as habitat destruction, pollution and food hunting, fur and traditional Chinese medicine ingredients. Endangered wildlife is protected by law and since 2005 the country has more than 2,349 natural reserves covering a total area of 149.95 million hectares, 15% of China's total land area.

China has over 32,000 species of vascular plants and is home to a variety of forest types. The cold coniferous forests predominate in the northern part of the country, supporting animal species, such as the elk, the Tibetan bear, along with over 120 bird species. Lesser tall wet coniferous forests can contain bamboo bark. Higher mountainous altitudes meet juniper and yew, bamboo is replaced by rhododendron. Subtropical forests, which predominate in central and southern China, support more than 146,000 species of flora. Tropical and seasonal wet forests, although limited to Yunnan and Hainan Island, contain a quarter of all animal and plant species found in China. China has over 10,000 species of mushrooms and of these, nearly 6,000, which belong to the Dikarya region.

In recent decades, China has suffered from pollution and serious environmental damage. While regulations such as the Environmental Protection Act of 1979 are quite strict, they are poorly applied as they are often ignored by local communities and government officials in favor of rapid economic development. Urban air pollution is a serious health problem in the country, with the World Bank estimating in 2013 that 16 of the 20 most polluted cities in the world are located in China.

China is the world's largest emitter of carbon dioxide. The country also has drinking water problems. Approximately 298 million Chinese people in rural areas do not have access to good drinking water; by the end of 2011, 40% of China's rivers were polluted by industrial and agricultural waste.

This crisis is exacerbated by the increasing lack of water, especially in the northeast of the country.

However, China is the world's largest investor in the marketing of renewable energy, with \$52 billion invested only in 2011, is a major producer of renewable energy technologies and is investing heavily in renewable energy projects on a local scale. Until 2009, more than 17% of China's energy came from renewable energy sources - most notably hydroelectric power plants - from which China has a total installed capacity of 197 GW. In 2011, the Chinese government announced four billion yuan (\$ 618.55 billion) investment plans for water infrastructure and desalination projects for ten years and completing the construction of a flood prevention and anti-drought, by 2020. In 2013 China has implemented a five-year plan, worth \$ 277 billion, to reduce air pollution, especially in the northern part of the country.

The "Sixth National Census of the People's Republic of China" in 2010, registered a total population of approximately 1,370,536,875.

The birth rate is 12.3‰, comparable to all European countries is one of the lowest in the world and the mortality rate is 7.1‰. The fertility rate is 1.55 children/woman, one of the lowest values, also from around the world.

Because of the one-child policy, China now has the highest aging population in the world. Although the law of the second child could be introduced as of 1 January 2016, a survey showed that only about one million Chinese couples want a second child.

For the coming years, population decline is projected and by 2100 the population will fall by over 400 million. The more China's economy grows, the more the birth rate will decrease. The vast majority of Chinese couples want one child.

Approximately 16.60% of the population was under 14, 70.14% were aged between 15 and 59 and 13.26% over 60 years. The population growth rate for 2013 is estimated at 0.46%.

Although China is a middle-income country, according to Western standards, China's rapid economic growth has lifted hundreds of millions of people out of poverty since 1978. Today, about 10% of the Chinese population lives below the poverty line, surviving less a US dollar a day, down from 64% in 1978. Urban unemployment in China dropped to 4% by the end of 2007. Currently, the unemployment rate in the urban area is about 4.1%.

With a population of more than 1.3 billion people and a decrease in natural resources, the Chinese government

is very concerned about the population growth rate and has been working with mixed results since 1979 to implement a strict family planning policy, known as the "Single Child Policy". Prior to 2013, this policy limited families to having only one child, except ethnic minorities and a degree of flexibility in rural areas. An important relaxation of the policy was adopted in December 2013, allowing families to have two children if one parent is an only child. China's Family Planning Minister indicated in 2008 that single-child policy would remain at least until 2020. There is some resistance to this single-child policy, especially in rural areas, primarily because of the need for labor in agriculture, but also the traditional preference for boy-boys. Families violating politics often lie at censuses. Data from the 2010 census suggests that the fertility rate can now be around 1.4.

China officially recognizes 56 distinct ethnic groups, most of which are the Han Chinese, which accounts for about 91.51% of the total population. The Han Chinese - the largest ethnic group in the world - are more numerous than the other ethnic groups in each provincial division except Tibet and Xinjiang. Ethnic minorities account for about 8.49% of the Chinese population, according to the 2010 census. In comparison to the 2000 census, the Han population grew by 66,537,177 people, or by 5.74%, while the combined population of the other 55 by national minorities, increased by 7,362,627 people, or 6.92%. The 2010 census recorded a total of 593,832 foreign citizens living in China. The largest such groups were from South Korea (120,750), the United States (71,493) and Japan (66,159).

Since 1986, compulsory education in China encompasses primary education and gymnasium education which together last for nine years. In 2010, about 82.5 percent of students continued their studies at a three-year high school cycle. Gaokao, China's "National Exam Admission Examination", is a prerequisite for entering most of the higher education institutions. In 2010, 27 percent of high school graduates enrolled in higher education. Professional (vocational) education is available to students from secondary and tertiary levels.

In February 2006, the government pledged to provide full nine years of free education, including the provision of manuals and allowances. Annual investment in education has increased from less than \$ 50 billion in 2003 to more than \$ 250 billion in 2011. However, inequality remains in spending on education. In 2010, spending per year for high school student in Beijing amounted to 20,023 CNY, while in Guizhou, one of the poorest provinces in China, spending did not go up to 3,204 CNY.

Free compulsory education in China is made up of primary and secondary school for children aged 6 to 15 years. In 2011, around 81.4% of Chinese graduated from the gymnasium. Until 2007, there were 396,567 primary schools, 94,116 gymnasium schools and 2,236 higher education institutions.

In 2010, 94% of the population over 15 years old was literate, compared with only 20% in 1950. In 2009, Chinese students in Shanghai obtained the best results in the world in mathematics, science and literature in the International Program for Student Assessment (PISA), a global assessment of school performance of students aged 15 years.

China is a miraculous country that has been developed lately at a galloping pace. China has succeeded in developing and strengthening the electronics and home electronics industries over the past thirty years, then in the past 15 years the car and automotive industry and has now been planning to develop its aerospace and aero industries together with its own passenger planes, so that it no longer needs to appeal to the big companies and especially to the two most famous monopoly today, namely Boeing and Airbus.

Chinese civilization originated from various regional centers along the Yellow River and the Yangtze River valleys of the Neolithic Age, but the Yellow River is considered the cradle of Chinese civilization. With thousands of years of continuous history, China is one of the oldest civilizations in the world. China's written history is found in the Shang dynasty (about 1700-1046 BC), although historical texts, such as the records of the great historian (about 100 BC) and the Annals of Bamboo, state the existence of a Xia dynasty before Shang. Chinese writings were given at the end of the Shang dynasty around 1200 BC. Most Chinese culture, literature and philosophy continued to develop during the Zhou Dynasty (1045-256 BC), (Petrescu, 2012b).

The Zhou dynasty began to move to internal and external pressures in the 8th century BC and the kingdom was divided into the smallest states, beginning in the spring and autumn, fully manifested during the wars. This is one of the multiple periods of failed statehood in China's history (the most recent civil war in China).

Between the times of many kingdoms and warriors, the Chinese dynasties (or, more recently, the republics) ruled the whole of China (minus Xinjiang and Tibet) (and, in a certain era, including Xinjiang and/or Tibet). This practice began with the Qin dynasty: In 221 BC, Qin Shi Huang joined the various kingdoms of the warriors and created the first Chinese empire. Successive dynasties in China's history have developed bureaucratic systems that allowed the emperor in China to directly control vast territories.

The traditional position of China's history is that of alternating periods of political unity and division, China being occasionally dominated by Asian inner peoples, most of them being assimilated to the Han Chinese population. The cultural and political influences of many parts of Asia, driven by successive waves of immigration, expansion and cultural disturbances, are part of China's modern culture.

During the Great Monday, the Communists reorganized themselves under a new leader, Mao Zedong (Mao Tse-tung). The bitter struggle between the KMT and the CCP continued openly or clandestinely through the Japanese occupation of 14 years (1931-1945) from different parts of the country. The two Chinese parties officially formed a united front to oppose the Japanese in 1937, during the Sino-Japanese War (1937-1945), which became part of the Second World War. After the defeat of Japan in 1945, the war between the KMT and the CCP was resumed after the reconciliation attempts and a negotiated settlement. Until 1949, the CCP established control over most of the country (see Chinese Civil War), (Huang *et al.*, 2016; Ali *et al.*, 2016; Kamble and Kumar, 2016; Saikia and Karak, 2016; Zeferino *et al.*, 2016; Pravettoni *et al.*, 2016; Bedon and Amadio, 2016; Chen and Xu, 2016; Mavukkandy *et al.*, 2016; Yeargin *et al.*, 2016; Madani and Dababneh, 2016; Alhasanat *et al.*, 2016; Elliott *et al.*, 2016; Suarez *et al.*, 2016; Kuli *et al.*, 2016; Waters *et al.*, 2016; Montgomery *et al.*, 2016; Lamarre *et al.*, 2016; Petrescu, 2012b; Aversa *et al.*, 2017a; 2017b; 2017c; 2017d; 2017e; 2016a; 2016b; 2016c; 2016d; 2016e; 2016f; 2016g; 2016h; 2016i; 2016j; 2016k; 2016l; 2016m; 2016n; 2016o; Petrescu and Petrescu, 2013a; 2013b; 2013c; 2012; 2011; Petrescu, 2018; 2015a; 2015b; 2012; Petrescu *et al.*, 2016a; 2016b; 2016c; 2017a; 2017b; 2017c; 2017d; 2017e; 2017f; 2017g; 2017h; 2017i; 2017j; 2017k; 2017l; 2018a; 2018b; 2018c; 2018d; Petrescu and Calautit, 2016a; 2016b; Daud *et al.*, 2008; Taher *et al.*, 2008; Zulkifli *et al.*, 2008; Pourmahmoud, 2008; Pannirselvam *et al.*, 2008; Ng *et al.*, 2008; El-Tous, 2008; Akheshmeh *et al.*, 2008; Nachientai *et al.*, 2008; Moezi *et al.*, 2008; Boucetta, 2008; Darabi *et al.*, 2008; Semin and Bakar, 2008; Al-Abbas, 2009; Abdullah *et al.*, 2009; Abu-Ein, 2009; Opafunso *et al.*, 2009; Semin *et al.*, 2009a; 2009b; 2009c; Zulkifli *et al.*, 2009; Ab-Rahman *et al.*, 2009; Abdullah and Halim, 2009; Zotos and Costopoulos, 2009; Feraga *et al.*, 2009; Bakar *et al.*, 2009; Cardu *et al.*, 2009; Bolonkin, 2009a; 2009b; Nandhakumar *et al.*, 2009; Odeh *et al.*, 2009; Lubis *et al.*, 2009; Fathallah and Bakar, 2009; Marghany and Hashim, 2009; Kwon *et al.*, 2010; Aly and Abuelnasr, 2010; Farahani *et al.*, 2010; Ahmed *et al.*, 2010; Kunanoppadon, 2010; Helmy and El-Taweel, 2010; Qutbodin, 2010; Pattanasethanon, 2010; Fen *et al.*, 2011; Thongwan *et al.*, 2011; Theansuwan and Triratanasirichai, 2011; Al Smadi, 2011; Tourab *et al.*, 2011; Raptis *et al.*, 2011; Momani *et al.*, 2011; Ismail *et al.*, 2011; Anizan *et al.*, 2011; Tsolakakis and Raptis, 2011; Abdullah *et al.*, 2011; Kechiche *et al.*, 2011; Ho *et al.*, 2011; Rajbhandari *et al.*, 2011; Aleksic and Lovric, 2011; Kaewnai and Wongwises, 2011; Idarwazeh, 2011; Ebrahim *et al.*, 2012; Abdelkrim *et al.*, 2012; Mohan *et al.*, 2012; Abam *et al.*, 2012; Hassan *et al.*,

2012; Jalil and Sampe, 2013; Jaoude and El-Tawil, 2013; Ali and Shumaker, 2013; Zhao, 2013; El-Labban *et al.*, 2013; Djalel *et al.*, 2013; Nahas and Kozaitis, 2014).

## Materials and Methods

C919, the passenger plane developed by China within a national project, was successfully launched at the inauguration of its flight. After a series of long delays, this is only the first step by which China is trying to penetrate the international aviation market.

C919, developed and produced by Aircraft Corp. or COMAC in brief, was initially scheduled to be prepared in 2012 with its first flight in 2016. Despite these delays, COMAC will be a serious competitor in the future for the leaders of the Boeing and Airbus civil aviation market, given that C919 will be up to 50% lower than the models produced by American and European competitors. This first model of the airplane, still under test, was taken off from Shanghai Pudong Airport, the event being broadcast live by the media in the Chinese state.

The latter declared the success of this project as a reason for national pride, only six other countries in the world have managed to produce a line plane of this size, especially in the context in which just days ago China launched the first the aircraft produced entirely on the domestic market.

China's ambition to develop its own civil aviation industry dates back to the 1970s when Mao Zedong's wife, Jiang Qing, supported the personal development of this sector. "A strong country must have its own passenger plane. China's commercial aviation industry cannot depend entirely on imports," said Li Jiexiang, the head of China's civil aviation authority. Between 150 and 170 passenger seats, C919 will be a competitor for Boeing 737 and Airbus 320.

Incorporating a state-of-the-art engine, specialists in the field believe the C919 is comparable as their competitors.

The plane is not fully developed in China, the engine, electronics, wheels, brakes and many other components being manufactured mainly in Europe and the United States. Airplane price is announced to be about 500 million dollars, with about 100 million dollars below the price of the catalog of its competitors.

Price differences may, however, increase in the case of large orders. Chinese media announced that there are already orders for 570 C919 devices from Chinese aviation companies. It is estimated that the global civil aviation market will total \$ 2 trillion in the next 20 years. Boeing estimates that just to cope with the domestic market, Chinese airlines will have to acquire over 6,000 passenger planes of different sizes, the cost of which is close to 1 trillion dollars.



**Fig. 1:** China has invested heavily in the army in recent years, developing state-of-the-art weapons and building airports in the South China Sea

The next step for the C919 to enter the global market will be the required certificates from American and European agencies, the FAA and EASA, which regulate the commercial aviation sector. Qatar Airways CEO Akbar Al Baker said shortly afterward that "there is no hesitation in a plane made in China, as long as they are built to a certain standard. There is nothing wrong with buying China-made products, but we are using China-made iPhone designed by someone else but manufactured in China. I think it will be good if this monopoly (Boeing / Airbus) is broken" he added this.

China has invested heavily in the army in recent years, developing state-of-the-art weapons and building airports in the South China Sea (Fig. 1).

## Results

C919, the passenger plane developed by China within a national project, was successfully launched at the inauguration of its flight (Fig. 2 and 3). After a series of long delays, this is only the first step by which China is trying to penetrate the international aviation market.

C919, developed and produced by Aircraft Corp. or COMAC in brief, was initially scheduled to be prepared in 2012 with its first flight in 2016. Despite these delays, COMAC will be a serious competitor in the future for the leaders of the Boeing and Airbus civil aviation market, given that C919 will be up to 50% lower than the models produced by American and European competitors. This first model of the airplane, still under test, was taken off from Shanghai

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China's commercial aviation industry cannot depend entirely on imports," said Li Jiaxiang, the head of China's civil aviation authority. Between 150 and 170 passenger seats, C919 will be a competitor for Boeing 737 and Airbus 320. Incorporating a state-of-the-art engine, specialists in the field believe the C919 is comparable as their competitors.

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**Fig. 2:** C919, the passenger plane developed by China within a national project, was successfully launched



**Fig. 3:** C919, the passenger plane developed by China within a national project, was successfully launched

## Discussion

China is a miraculous country that has been developing lately at a galloping pace. China has succeeded in developing and strengthening the electronics and home electronics industries over the past thirty years, then in the past 15 years the car and automotive industry and has now been planning to develop its aerospace and aero industries together with its own passenger planes, so that it no longer needs to appeal to the big companies and especially to the two most famous monopoly today, namely Boeing and Airbus.

Considering China's history, a friendly country with intelligent and working people, the launch of a prototype of its own passenger plane is good news and we want China to be very successful in all its technological enterprises. The plane will evolve with its steps, but it will certainly do so. Given the fact that such an aircraft is a real technological jewel, we can realize that Chinese specialists have evolved a lot over the last 30 years with the country's technological development. Having the courage to produce something like that already says a lot.

## Conclusion

China has invested heavily in the army in recent years, developing state-of-the-art weapons and building airports in the South China Sea.

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## Ethics

Author declares that are not ethical issues that may arise after the publication of this manuscript. This article is original and contains unpublished material.

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