

### **STATE AND DEVELOPMENT OF PROSPECTS OF CUBAN CIVIL AVIATION**

*The article deals with the problems of development of civil aviation in Cuba, analyzing the state of development of passenger and cargo air transport, and the impact of aviation on the other sectors of the economy in the country.*

*Key words: Cuban civil aviation passenger and cargo air transportation.*

**Statement of the problem.** *The Cuban air force has undeniable historical value, since has the achievement of the first international flight of Latin American aviation, when the May 17, 1913 aircraft, with Cuban pilot, flying the distance between Key West and Havana in 2 hours 40 minutes.*

**Analysis of studies and publications on the issue.** *Higher Institute of Aviation Management in Cuba is the Ministry of Transport, which assigns these functions to his unit "Higher Organization of the Office of Cuban Aviation Enterprises Corporation SA (CACSA), which was established in 2012 in return for an early existing Civil Aviation Institute of Cuba (IACC). CACSA is flexible in order to facilitate the expansion of international air flights, increase trade, improve the well-being of passengers and customers with the maximum safety of its flights and services. At the same time, encourages cooperation with foreign companies that contribute to the development of air transport, improve efficiency, the introduction of improvements and new technologies on the basis of the agreements reached with them.*

*Aviation relations is carried out on the basis of bilateral treaties and multilateral agreements, international and regional. The Convention on International Civil Aviation of 1944, also known as the Chicago Convention, is the foundation on which to build a policy of the Cuban air transport. Furthermore, CACSA member is:*

- *International Civil Aviation Organization (ICAO).*
- *Latin American Civil Aviation Commission (CLAC).*
- *Regional planning and management of air navigation CAR / SAM (GREPECAS).*
- *International Society of Aviation Telecommunications (SITA).*
- *Latin American Air Transport Association (ALTA).*
- *Cuba has signed more than 70 agreements and memorandums of air transport c countries on all continents.*

**Formulating goals.** *Article is devoted to the problems of development of civil aviation in Cuba, the analysis of the state of development of passenger and cargo air transportation, aviation and the impact on other sectors of the economy in the country.*

#### **The main material.**

##### **Mission CACSA.**

*CACSA has the mission to be the lead agency for the implementation and monitoring of the policy of the Cuban State in respect of air transport, air navigation and related services. To do this, manages and promotes the professional performance of specialized services at all levels of the organization, to support the sustainable growth of tourism, maintaining ethical behavior governing international aviation, and which is characterized by high reliability, speed, safety and efficiency on the basis of loyalty, commitment, leadership and open communication skills employees and with customers.*

##### **Functions CACSA.**

Among the main features CACSA:

- Exercise, within its competence, the management of air navigation to the international aviation community, public and private entities;
- Normalizes and regulates the facilities, air navigation services at airports, the surrounding security zone, ground handling, air traffic, communications and air navigation services, metrology, aeronautical information and search and rescue operations in case of unfortunate accidents;
- The rules and regulations to ensure the safe and efficient operation of aircraft in respect of safety, operating procedures and providing air navigation personnel licenses, aviation medicine and the prevention of accidents;
- Ration, implements and monitors the security and protection of civil aviation against acts of unlawful interference, and other acts that are crimes under international law.
- Environmental Strategy CACSA.

CACSA has environmental strategy that aerodrome management is responsible for all that is connected with the strategy, monitoring and integrated assessment of environmental issues on the ground, the safety of the surrounding areas and facilities under his leadership in the civil aviation system. The main purpose of the Environmental Strategy is to minimize the harmful impact of civil aviation on the environment, in particular, noise and aircraft engine emissions. In addition, among many other activities on the environment, the Cuban aviation management intends to implement the strategy set out by the Ozone Technical Office (OTOZ) for reducing substances that deplete the ozone layer of the atmosphere.

Service at airports.

Over the past 10 years in a Cuban civil aviation has seen a steady growth. More than 94 Cuban and foreign airlines from 39 countries, operates scheduled and charter flights for passengers and cargo in 10 international airports located throughout the geography of the Cuban archipelago. Cuba has about one hundred and runways, of which 25 are airports, of which 15 - and 10 national - international.

International airports of Cuba as follows:

- Jose Marti International Airport - Havana (HAV)
- Airport Juan Gualberto Gomez - Varadero (VRA)
- Vilo Acuña Airport - Cayo Largo del Sur (CYO)
- Airport Jaime Gonzalez - Cienfuegos (CFG)
- Airport Maximo Gomez - Ciego de Avila (AVI)
- Airport-Ignacio Agramonte Camaguey (CMW)
- Frank Pais Airport - Holguin (HOG)
- Airport Sierra Maestra - Manzanillo (MZO)
- Antonio Maceo Airport - Santiago de Cuba (SCU)
- Airport Jardines del Rey - Cayo Coco (CCC)

Cuba also provides air traffic control for more than 500 international flights flying over Cuban airspace on a daily basis, resulting from North to South America and back, three air corridors: Nuevas, Maya and Chiron, which have modern systems and technologies for the management of ATC.

The map shows the location of the main Cuban airports:



**Fig.1. Location of international airports in Cuba.**

Cuban airports are of high quality, long and wide runways, airports strongly supported engineering, technology, clean and tidy, equipped with modern systems VORs, NDBs and ILSs are in excellent condition. For the construction, maintenance and operation of airports in the structure CACSA a Cuban company of airports and air navigation services (ECASA). Safety of Air Navigation maintained strict discipline, the aircraft is very well equipped and in excellent condition. Customs and Border security is excellent.

Among the major prospects of aviation activities in Cuba include:

- Improving the safety monitoring system;
- The introduction of new systems of CNS / ATM;
- The achievement of quality standards of services at international airports to meet all customer expectations.

Cuban airlines.

Cuba has four airlines:

- Cubana de Aviación S.A. - is the leading airline Cuban aviation. Founded in 1929. Provides transportation of passengers, cargo and mail, safely and effectively with highly skilled personnel. The main base of operations is in the Jose Marti International Airport in Havana. Its unit Cubana SA Sargo performs freight transport general cargo, perishable cargo, dangerous goods, animals, valuable cargo, human remains. Cubana de Aviación S.A. operates flights to the following domestic destinations: Baracoa, Bayamo, Camaguey, Cayo Coco, Cayo Largo del Sur, Cienfuegos, Guantanamo, Holguin, Havana, Manzanillo, Moa, Chiron, Santa Clara, Santiago de Cuba, Varadero, Victoria de Las Tunas. International flights: North America: Halifax, Montreal, Toronto, Cancun, Central America and the Caribbean: San Jose, Santo Domingo, South America: Buenos Aires, Bogota, Caracas, Europe: Madrid, Paris, Rome, London, Moscow .
- Aero Caribbean SA-operates flights on the transport of passengers and freight, scheduled and charter, domestic and international, in the main, on the Caribbean and Central America. The main base of operations is in the Jose Marti International Airport in Havana. Aero Caribbean S.A. operates flights to the following domestic

*destinations: Havana, Varadero, Cayo Coco, Holguin, Santiago de Cuba, Victoria de Las Tunas, Bayamo, Manzanillo, Moa, Baracoa. International flights to Managua, San Pedro Sula, Port au Prince, Santo Domingo.*

- *Aerogaviota SA-operates flights for passengers and cargo, regular and charter, VIP flights for business, national and international, mostly in the Caribbean and Central America. Aerogaviota S.A. operates flights to the following regional areas: Antigua and Barbuda, Bahamas, Barbados, Belize, Cayman Islands, Colombia, Dominica, Dominican Republic, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Martinique, Mexico, Nicaragua, Panama, Saint Lucia, Saint Vincent and the Grenadines, Trinidad and Tobago, Venezuela. The national charter flights Cayo Levisa, La Coloma, Chiron, Havana, Varadero, Cayo Largo del Sur, Cienfuegos, Santa Maria, Cayo Coco, Santa Lucia, Santiago de Cuba, Holguin. Also provides helicopter transportation of passengers, cargo, motion pictures, photos, research, launch of paratroopers. The main base of operations is in the Jose Marti International Airport in Havana.*
- *National Company of airport services (ENSA) -. operates scheduled domestic flights on the transport of all mail and press, as well as agricultural and forestry work. The main base of operations is in the Jose Marti International Airport in Havana. Provides charter air taxi service for passengers on domestic routes, air taxi was based at airports Cayo Largo del Sur and Varadero.*
- *Cuban airlines use common code with other foreign airlines such as Aerocaribe, Aeroflot, Blue Panorama, Air Europa, Copa Airlines, Air Jamaica, and TACA. Also have bilateral agreements with dozens of airlines. Cuban airlines strive to remain as the preferred market of Cuba and the Caribbean, based on a high level of safety, efficiency and service. They are certified to ISO 9000 and IOSA (IATA Operational Safety Audit). In addition, certified by the Cuban standard systems to improve management of the enterprises.*

*Service on the Cuban airline flights.*

- *Company Cuba Catering S.A. specializes in the supply of food for the passengers on board aircrafts, providing these services to more than 30 domestic and foreign airlines. Established in 1979, the food industry has plants in Havana, Varadero, Holguin and Camaguey to provide supplies for the flights, which include Cuba in their itineraries. Also has centers cooking accessible to tourists and passengers in the restaurants and cafes in the airport of Santa Clara, Cienfuegos, Ciego de Avila, Camaguey, Manzanillo and Santiago de Cuba. Among the airlines who use the service of Catering SA stand out: Iberia, Air France, Aeroflot, Condor, and LTU, all with an established reputation in the international arena. In addition to the dishes and drinks guarantees all kinds of related products to provide various services on board the aircraft, such as pillows, blankets, newspapers and magazines, facilities for toilet, hygiene and cleaning, headphones with music. Service at the airports and airlines flights Cuban excellent, full of charm and respect for aviation crews and passengers: personalized service, hot food and all kinds of drinks for passengers on international and domestic flights.*

*Aircraft fleet of Cuban airlines.*

*Over the years, technical and technological needs of the Cuban aircraft were delivered from several vendors: U.S., USSR, Russia and European countries. All the above mentioned carriers are state-owned companies have in their parks around 170*

aircrafts, Ukrainian, Russian, American, French and European production, including: AN-24RV, AN-26, AN-2, AN-158, Boeing 767 - 300, Boeing 727, Boeing 447-400F, IL96-300, IL62-M, IL-18D / C, TU204-100CE, TU204-100E, YAK-42, Airbus 320-200, ATR 42-500, ATR 72-210 , ATR 42-300, EMBRAER-110, PZL-M-18 helicopter MI-8MTV1, MI-17 helicopter.

Domestic aircraft takes about 20% of the Cuban market transport of passengers and goods. The rest of the market is shared between foreign airlines such as Aeroflot, Air France, KLM, Copa Airlines, LACSA, Cayman Airways, Blue Panorama, Air Jamaica, British Airways, Air Berlin, TAAG, AeroMexico, Air Canada, Air Europa, Condor, Avianca , Virgin Atlantic, Global Air, Alitalia, Air Pullmantur, Bahamas Air, BWIA West Indies Airways, LAE, LAN, Livingston, LTU, Martinair, Neos, Sky Airline, TACA, Tame, among others.

Training of staff for aviation.

Pilots and aviation specialists are the main training, all taught in the education system of the country at the state's expense. Most professionals are graduates of Soviet and Russian aviation academies, and when operated aircraft from other countries enrolled in them.

Professionals and pilots are currently being prepared in the aviation training centers in other Cuban universities and technical schools. Training specialists extends generally in two stages: first, students come to school elementary education, and then to other schools for specialization. Foreign pilots do not have the right to control aircraft in Cuban airlines. In some cases, when exploited by foreign aircraft leasing contract, the captain and co-pilot - the foreigners, but the crew cab - Cubans. The pilots, dispatchers, supervisors are fluent in Spanish, Russian, English and French. The main centers of aviation personnel are:

- Learning Center Aeronautics (CCA). - Founded in 1989 as the National School staff of the Institute of Civil Aviation of Cuba, and in 1994 was approved by the Council of Ministers of the Republic of Cuba as a training center. Recognized by the Ministry of Higher Education with the category A for postgraduate training. The center had been prepared 23,044 executives, managers and professionals for various civil aviation companies: airlines, airports, aviation services companies, and other companies that provide services and support to aviation. The Centre has also prepared 165 managers for the management of civil aviation in different countries of Latin America, including Chile, Costa Rica, Ecuador, El Salvador, Haiti, Mexico, Panama, Paraguay, Peru, Dominican Republic, Uruguay and Venezuela. Since 1996, the training center of Aeronautics joined the International Network TRAINAIR ICAO, which are attached to the center 41 of the 36 countries of the world.

- Aviation Training Centre (CAA) -. Founded in 1970 as a training center for Cuban civil aviation, is designed to train, develop and improve the training of technical personnel in various fields of aviation. Recognized by the Ministry of Higher Education with the category A for postgraduate training of Aeronautics. Maintain direct communication with professional institutions in other countries like Panama, Ecuador, Guatemala and the Dominican Republic, as well as the Higher Polytechnic Institute of Havana. Over the past 10 years has trained about 2,000 professionals aviation field, in the international sphere is working in the field of training in aircraft maintenance, pilot training jet and turboprop aircraft. The center has a temporary membership in the International Network TRAINAIR ICAO.

The influence of the U.S. blockade on the Cuban civil aviation.

Almost no one now doubts that the blockade, which the U.S. government for more than 50 years, exposes the Republic of Cuba, is actually an act of genocide. The blockade by the United States continues to inflict great damage of the Civil Aviation of Cuba. From May 2009 to April 2012 led to the blockade of 811,462,318 dollars of losses in this sector. It should be emphasized that the blockade measures in the aviation sector and violate the Chicago Convention on International Civil Aviation, signed by 190 countries of the world, including the United States. A specific items, which states that international air transport services should be based on equality of opportunity and performed honestly and economically, and its 44th article, calling among the goals and objectives of the International Civil Aviation Organization (ICAO) to ensure consistent respect for the rights of the Member States and the elimination of discrimination against them.

As a result of the policy of blockade Cuban airlines can acquire aircrafts, technology, components, spare parts, fuel, materials and supplies general in the American market, and therefore have to resort to third markets through intermediaries who are impressed by the higher prices and tough conditions.

In a time when the American law on the Cuban embargo prohibits airlines fly in and in the airspace of the United States, the Cuban government allows entry into its territory of U.S. airlines, which carry about 60 charter flights weekly, following from Miami, Los Angeles and New York in the Cuban city of Havana, Varadero, Holguin, Camaguey, Cienfuegos and Santiago de Cuba, airlines Miami Air, Continental, American Eagles, Gulf Stream, Sky King, which the Cuban aviation system provides all the necessary services in Cuban airports.

Passenger traffic.

As can be seen in the table, the number of passenger-kilometrov of air transportation represents a high percentage of total passenger traffic, made each year in the country. At the end of 2011 this indicator accounted for 27% of the total traffic that is supported by international passenger traffic from remote from Cuba geographical regions of the world that has a positive effect on passenger-kilometer. According to the table that is second only to the volume of air passenger transport by buses.

Table 1

**Passenger transport by specialized state-owned enterprises,  
million passenger kilometers**

Name	2006	2007	2008	2009	2010	2011
Total	10 779,6	10 870,9	10 746,3	10 360,4	10 502,3	9 409,0
Train	1 233,4	1 286,3	1 056,5	979,8	924,8	934,1
Bus	4 863,9	5 266,0	6 259,1	6 633,5	6 611,8	5 476,6
Taxi	257,4	279,8	291,9	332,5	356,9	412,0
Sea and river	43,1	30,6	42,4	35,3	34,7	41,7
Aircraft Total	4 381,8	4 008,2	3 096,4	2 379,4	2 574,1	2 544,6
Of which: Domestic	215,5	205,0	207,3	387,6	419,3	133,8
International	4 166,3	3 803,2	2 889,1	1 991,8	2 154,8	2 410,8

The following table shows the number of passengers carried by various means of transport in the period 2006-2012 Cuban public transport companies. According to the table we see that the passengers of the aircraft is much smaller than the passenger traffic in each other modes of transport.

Table 2

**Passengers carried by specialized state-owned enterprises,  
million passengers**

Name	2006	2007	2008	2009	2010	2011	2012
Total	1453,8	1669,1	1782,5	1795,7	1601,4	1609,8	1655,3
Train	10,5	10,3	7,9	7,5	8,3	9,7	9,9
Bus	697,9	755,6	898,1	922,6	900,4	902,4	895,7
Taxi	40,2	43,7	45,6	46,7	45,8	48,2	48,3
Sea and river	3,5	3,7	3,1	3,4	3,4	3,5	3,4
Aircraft Total	1,7	1,6	1,5	1,2	1,2	1,1	1,2
Of which: Domestic	0,7	0,6	0,6	0,5	0,5	0,4	0,4
International	1,0	1,0	0,9	0,7	0,7	0,7	0,8
Alternative means	700,0	854,2	826,3	814,3	642,3	644,9	696,8

Freight transport.

Air transportation of goods not show the progress achieved in the transport of passengers. As shown in the two tables below, the carriage of goods by air, both indicators ton-killometrov as an indicator tons, occupy a very low percentage of total cargo transportation by all modes of transport in Cuba.

Table 3

**Turnover, million tonne kilometers**

Name	2006	2007	2008	2009	2010	2011
Total	13854,1	14329,5	7583,9	9086,9	8464,0	7425,5
Train	1438,9	1410,8	1387,9	2790,9	1852,2	1912,8
Car	2094,5	2007,3	2221,8	2315,1	2973,0	2461,4
International Marine	9750,2	10142,5	3654,7	3550,2	3076,8	2469,8
Maritime cabotage	507,7	714,3	274,2	381,4	512,1	538,6

<i>Total Aircraft</i>	62,8	54,6	45,3	49,3	49,9	42,9
<i>Of which: Domestic</i>	2,7	2,5	3,0	5,6	5,7	4,9
<i>International</i>	61,1	52,1	42,3	43,7	44,2	38,0

Table 4

**Cargo transported, tons**

<i>Name</i>	2006	2007	2008	2009	2010	2011	2012
<i>Total</i>	48072,6	49416,8	55077,5	52497,6	46523,2	49613,8	87830,8
<i>Train</i>	8699,2	10190,5	13800,0	9926,1	12774,8	16466,4	15522,8
<i>Car</i>	35755,2	35086,1	39233,6	41567,2	31853,7	31196,6	71009,0
<i>International</i>							
<i>Marine</i>	2379,6	2425,6	1136,7	452,9	1057,6	527,6	385,7
<i>Maritime cabotage</i>	1219,2	1697,7	892,7	541,7	826,6	887,0	803,7
<i>Total Aircraft</i>	19,4	16,9	14,5	9,7	10,5	8,6	9,6
<i>Of which:</i>							
<i>Domestic</i>	2,2	2,0	2,4	2,0	1,2	0,8	1,1
<i>International</i>	17,2	14,9	12,1	7,7	9,3	7,8	8,5

*The impact of tourism on the Cuban civil aviation.*

*Tourism is the main driving force behind the development of commercial air travel. The following table shows the effect that Cuba poses to international tourism, due to an increase in the number of air passenger traffic, because almost 99% of the tourists coming to Cuba on air flights. Similarly, tourist activity has a positive effect on the increase in revenues from international passenger traffic in the Cuban economy.*

Table 5

**Indicators of air travel**

<i>Name</i>	2006	2007	2008	2009	2010	2011
<i>Arrival of tourists on flights in the air, thousands of passengers</i>	2 150	2 119	2 316	2 405	2 507	2 688
<i>Revenue from international passenger traffic, USD</i>	265,9	254,2	256,5	183,2	193,3	220,4

**Conclusion.** *Cuba has established itself as a tourist destination with a rapid increase in the number of passengers - arrivals and revenues. Since 1996, Cuba joined a small group of five countries in the Caribbean, taking more than a million foreign tourists a year. Thus, growth in the number of tourist arrivals increased from 1990, when Cuba came to rest 340 000*



*passengers, to reach 2,716,000 passengers in 2011. This is an impressive growth of 80% over the past two decades. The rise, which occurred despite the fact that we live in an era marked by the disappearance of the socialist camp, the global crisis of the tourism industry after the terrorist acts of September 11, 2001 in New York and Washington, as well as the global financial crisis that started in late 2008, factors Compounding the global economic downturn that led to the collapse of many major airlines.*

*As you can see, Cuba is developing civil aviation in accordance with the strategic objectives of ICAO, and this concentrates the main effort, especially in the human factor, as its main strength.*

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