



# Cuba's Rail Road Industry

## Brief

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The overwhelming majority of the Cuban population has ready access to rail service. Rail transportation has played an important part in Cuba's economy for many decades, hauling primarily sugar, oil products and other cargo. Rail passenger transportation has been equally important, particularly during the last two decades as gasoline and diesel fuel shortages/rationing have reduced automotive traffic.

Equipment problems, however, are vast. In addition to great diversity of equipment, the system is plagued with poor maintenance of rolling stock and tracks, and lack of fuel. As of 2003, the island's railroad system had about 8 thousand miles of track, both standard and narrow track gauge. Forty percent of the system is dedicated to freight/passenger service, the balance to the sugar sector that after a full decline, is now slowly recovering. Most of the narrow gauge track is now effectively out of commission. The railroads comprise about 7,955 miles of track, of which 3,045 (2,626 standard gauge) miles carry both passenger traffic and cargo. For the purposes of this report only the standard gauge track will be considered.

Beginning in the late 1970s, the reconstruction of the Central Railroad was initiated in order to increase its speed, capacity and safety. The railroad equipment included diesel locomotives manufactured in the Soviet Union and Hungary, as well as a number made in Argentina. In spite of these efforts, the equipment, particularly the locomotives, remain inefficient in the use of fuel by comparison to North American and European standards. Recently second hand equipment from Canada, and brand new equipment from China has been incorporated and most of the Soviet bloc locomotives discontinued.

Generally, the main lines have been rehabilitated and maintained to acceptable standards with heavy rail and concrete ties: speeds of 70 mph+ are common. Inter-city passenger trains are generally slower due to frequent stops, but they are well patronized; while reserved seats are sold, standing is common.

There are 1,256 railway stations in Cuba, of which 258 are considered in good operational conditions, including warehouse facilities, tanking for fuels, some (24) with repair shops, etc. There are a number of industrial facilities for assembly and reconstruction of boxcars, specialized railcars, and the production of rails, wheels and spare parts. There are twenty-four maintenance and repair shops scattered around the country, the largest at Havana (2) and Camaguey.

### **Importance of Railroads to Cuban National Economic Development**

Cuba's railroad, the Union de Ferrocarriles de Cuba (UFC), is operated as a fully integrated state enterprise by Cuba's Ministry of Transport. Current staffing remains high for the size and volume generated by this system. Although the rail infrastructure is in reasonable level of maintenance; upgrading and/or modernization mainly of the signalization system is required. A more critical need in the near term is a speedier replacement of locomotives and other rolling stock. A plan to do so was started in 2014 by UFC with the support of several other Cuban, Russian and Chinese enterprises

Intermodal (rail/truck/maritime) traffic between Cuba and the U.S. will be vital to successfully transition the controlled economy to a free market-driven economy. This is the main motive for the improvements UFC is doing, receiving for that an important part of the very limited Cuban government budget. Such economic transition must occur quickly and effectively in order to achieve efficient, on-time delivery of services to potential customers, both in the U.S. and Cuba. Furthermore, container traffic moved by rail to distribution centers and/or the end customer is vital for the UFC itself to become profitable.

Currently, rail access to/from ports appears to be haphazard. Access to piers often is nonexistent, inadequate, e.g., one rail spur only, or in need of maintenance and repairs. Since intermodal traffic would be a major key to economic success in a free Cuba, every effort should be made early on to focus on improving rail access to/from ports.

### **Organizational/Governance Structure**

Cuba's railroad is currently operated as a fully integrated state enterprise by Cuba's Ministry of Transport. The UFC employs approximately 16,000 staff, although moderate staff reductions have been made in recent years. Current staffing remains high for the size and volume generated by this system, but is not atypical from other government-owned and -operated systems around the world.

### **Traffic Volumes/Commodity Flows**

The UFC operates approximately 3,200 miles (5,000 km) of so-called standard gauge track. The main artery of this standard gauge line runs along the spine of Cuba, which has been nominally maintained, including for purposes of military shipments. An additional 4,400 miles (7,000 km) of predominantly narrow-gauge rail trackage is operated by approximately 80 plantation railroads that haul cargo to and from the UFC mainlines. The majority of commodities carried are related to the tobacco and sugar industries. According to various economic reports and databases, more than 70 plantations and their related rail systems have ceased operation in recent years.

Only 95 miles (151.7 km) of tracks in Cuba are electrified. This electrified section is used for commuter passenger traffic between Havana and Matanzas.

### **Current State Of Rolling Stock, Infrastructure, And Operations**

Prior to 1959, most, if not all, of Cuba's rolling stock was U.S. made, with locomotives manufactured by either General Motors or General Electric. U.S. locomotives continue to be prized for their robustness, reliability, and relative ease of maintenance and repair. However, obtaining spare parts has been difficult, but not impossible.

Since 1959, the former Soviet Union, the former Czechoslovakia, Romania, and Canada have provided Cuba with rolling stock. These locomotives have proven unreliable after only minimal length of service, in part because of climate incompatibility. Replacement parts are scarce and directly affect UFC's ability to provide nominal service.

The freight car fleet is made up of pre-Castro era cars manufactured in the U.S., and cars more recently manufactured, mostly from former Soviet Bloc countries. To keep the fleet operational, the UFC has, since 1959, adapted and domestically manufactured spare parts from obsolete U.S. and other foreign country designs.

### Infrastructure

As described in the October 1999 Railway Age magazine, UFC's "...main lines are laid with 112-pound, Soviet-supplied bolted rail, Cuban-made pre-stressed concrete is maintenance-of-way equipment." In the same article, the editor states in his first hand account that "(i)n the early 1990s, UFC undertook reconstruction of its Havana-Santiago de Cuba main trunk, but this project didn't get very far due to ties, and screw bolt fasteners. Track products are scarce, as Cuba's economic downturn. Some of the new construction has been cannibalized to repair other parts of the network." The basic UFC main-line rail infrastructure was well designed and built and is capable of carrying considerably heavier loads, (e.g., military equipment), at greater frequency of operations if modern rolling stock were available.

Branch and/or plantation lines, predominantly of the so-called narrow gauge kind, often are in marginal shape. The condition of a small, one commodity, company-owned railroad is most often directly related to how well that company is doing economically. In a reconstituted free market economy, a number of companies may simply want to abandon some or all of their own rail transportation in favor of other transportation alternatives.

Generally, rail hub infrastructure such as major railway stations, e.g. Havana, has been nominally maintained. Some stations have been restored and/or modernized. For instance, a major new railway station was built and brought on-line in Santiago in 1997. In 1998, rail facilities at and with access to the port of Matanzas, from where much of Cuba's sugar production is shipped, were upgraded. These cases are the exception; however, many other stations around the country are crumbling due to financial neglect. Reflecting Cuba's dire housing shortage, it is reported that Cuban families have actually taken up residence in some stations, leading to vandalism and further, even faster, deterioration of facilities.

When Soviet aid ceased in the early 1990s, several countries signed cooperation agreements with Cuba to assist in maintaining, and in some cases, modernizing rail-related infrastructure. However, this assistance appears not to have materialized in any major way, as witnessed by recent multiple suspensions of passenger services due to track deficiencies.

Rail access to/from ports appears to be haphazard. Access to piers often is nonexistent, inadequate (one rail spur only), or in dire need of maintenance and repairs.

The total volume of Construction Materials produced and moved was 11 million tons during 2014. 60% of the transportation was via rail, with 132 train stations operating Construction Materials and 17 ports connecting with the National Rail System.



Ports with potential for Rail Barges in Cuba

### National Railways of Cuba

Ferrocarriles de Cuba (FCC) or Ferrocarriles Nacionales de Cuba (English: National Railway Company of Cuba), the only railway operating in the Caribbean basin, provides passenger and freight services for Cuba.

Ferrocarriles de Cuba uses 1,435 mm (4 ft 8 1/2 in) (standard gauge) that extends from Guane (province Pinar del Río) in the westernmost part of the island up to the bay of Guantánamo in the eastern part. Most of the 4,226 km is diesel with 140 km electrified. The branch to Trinidad in the south coast is damaged at a bridge and the rail service there is no longer connected to the rest of the national rail network. Local railcars run from the damaged bridge through Trinidad to the coast daily plus a steam locomotive and two home-built coaches on tourist tours through the sugar cane valleys of the Escambray Mountains.

The flagship Tren Francés ("French Train") service the Central Lines between Havana and Santiago de Cuba and is operated by coaches originally used in Europe between Paris and Amsterdam on the ex-Trans Europ Express service. The train is formed by 12 coaches and a Chinese-built diesel locomotive.

The Hershey Electric Railway is an electrified railway from Havana to Matanzas that was built by the Hershey Company in order to transport workers and products after it had bought sugar plantations in 1916. It is a commuter service running in northern Havana and Matanzas provinces using some original equipment

National Railways of Cuba Summary	
<a href="#">Reporting mark</a>	FCC (also: FC, FFCC)
<b>Dates of operation</b>	1924–
<a href="#">Track gauge</a>	1,435 mm (4 ft 8 1/2 in)
<a href="#">Electrification</a>	140 km
<b>Length in Regular Operations</b>	4,226 km (2,626 mi)
<b>Stations (passengers &amp; cargo)</b>	239
<b>Stations (only cargo + warehouses)</b>	188
<b>Headquarters</b>	<a href="#">Havana</a>

Freight cars were mainly acquired from former Eastern Bloc countries and the then USSR, whereas passenger cars from other countries friendly to Cuba (Spain, Japan, Canada, Iran and France). Currently Cuba has 9,600 freight and passenger cars in different levels of repair, including specialized cars for chemicals, minerals, alcohol, containers, fuels, etc. Total cargo were in 2014 some 26 million mt (or 637 million tons/miles), and 58 million passengers with 1.5 million mt baggage and paid accompanying cargo.

### Recent Developments in Cuba's Railroad System

On September 25, 2007, investors from the Venezuelan Bank for Socio-Economic Development (BANDES) reached an agreement with transportation officials in Cuba to invest US\$100 million for infrastructure improvements and repairs to Cuba's rail network. The work is expected to help increase the average speed of trains on Cuba's railways from 40 km/h (25 mph) to 100 km/h (62 mph). As part of the agreement, Cuban engineers will also work on similar projects on Venezuela's rail network. In October 2007, the Cuban railways ordered two hundred passenger cars and 550 freight wagons from Iranian manufacturer Wagon Pars. In May 2010, the Cuban government announced wide-ranging plans to repair the railway network, buy new rolling stock, and open four centers to train railway workers. In February 2015, more than 2,000 members of the Cuban Army's Corps of Engineers were engaged in the National Railways repair and upgrade.

In April 26, 2015 Cuba (Unión de Ferrocarriles de Cuba and Grupo Empresarial de la Industria Sideromecánica GESIME) signed a contract with the Russian enterprise Uralvagonzabod, to install in San Luis, Santiago de Cuba an assembly plant for rail wagons, both passenger, general cargoes, bulk and liquid, and container rail platforms. In 2016, they are planning to complete the first line of production there and build 400 units.

### Foreign Direct Investment Trends in Cuba

Cuba's real GDP was \$70 billion in 2013, relatively low compared with larger LAC economies, but greater than LAC countries of similar area, GDP, and (or) population, including Bolivia, the Dominican Republic, and Guatemala. Among these countries, Cuba had the highest GDP each year from 1990 through 2013. The Government of Cuba passed law No. 118 (FIL) in 2014, which allows foreign direct investment (FDI) in the country. Also 276 projects for more than 8 billion USD has been offered for FDI in the last few months. Economic growth is planned to rebound as a result of these changes. Since December 17th announcements From Presidents Obama and Raul Castro on the improvements of relations between the USA and Cuba most of the economic indicators had improved i.e. the Tourism sector grew in the first 4 months of 2015 more than 15% with respect to similar period of 2014.

The leading sectors to receive FDI in Cuba will be Agriculture, Mining, Construction Materials and other Natural Resources, Telecomm, Ports/Maritime Transportation & Services and Tourism. From 1990 through 2014, Cuba received about \$9.5 billion in FDI, of which 80% was received from only 50 of about 700 foreign investors. The Cuban Government is attempting to have not less than \$2.5 billion per year, from 2015 onwards. In Cuba, law No.118 allows for 100% foreign ownership of businesses, but as of April 2015, only eleven wholly foreign-owned firms were operating in the country. The average maximum share of foreign ownership allowed in

mining and oil and gas for LAC countries as of 2014 was about 96% and 86%, respectively. In Cuba, foreign joint venture investors are granted dominant market shares and the Government restricts competition and profit margins. Also, FDI firms in Cuba must pay wages to an employment agency in hard currency, but the agency compensates workers in local currency, which essentially devalues the wages by as much as 90%. The process of FDI in Cuba is just starting and many corrections and adjusting will be required.

### Cargo Transportation USA/Cuba, Export/Import

Already most of the still limited trade US/Cuba is transported by shipping. In an after embargo or relaxed embargo context, the cargo transportation between both countries will be substantial. Most of the goods to be transported are the same that were traditional before the Revolution in Cuba (1959) including sugar, molasses, tobacco, rum, manganese ore, chromite ore, copper concentrates, nickel, cobalt, construction aggregates, gypsum and many others north bound and foodstuffs, softwood, pulp, coal, chemicals, machinery and equipment, automotive, fertilizers, pesticides, other agricultural supplies. In the next future, a large amount of new items will be part of the bilateral trade, including oil & gas products, supplies and equipment, electronics, telecommunications, parts a supplies for energy generation & transmission, cement, lime, limestone, igneous rock, many others. The trade scenario will be very much related for the short distances between Florida and Cuba's northern ports, the potential for using low cost barge transportation, and the existence of a large railway system in both sides of Florida Straits, that is a main factor in the intra-port and inter-port movement of merchandise. The table below show some estimation we made on that potential.

Cargo Thousand mt	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Sugar (bulk and bagged)	400	500	600	600	600	700
Alcohol & Molasses	200	200	200	300	300	300
Fertilizers, Pesticides, other supplies	200	200	300	300	400	400
Construction Materials, all	1,000	1,500	2,500	6,000	7,500	7,500
Foodstuff all	600	750	750	1,000	1,200	1,500
Wood, pulp, paper	400	500	500	500	1,000	1,000
Equipment, Machinery, cars, other	600	750	750	1,000	1,000	1,000
Oil & Gas products	500	2,500	2,500	4,000	5,000	5,000
Miscellaneous (ores, coal, scrap metal, many other)	1,500	2,000	2,000	3,000	3,000	4,000
<b>Total (est.)</b>	<b>5,600</b>	<b>8,900</b>	<b>10,100</b>	<b>16,700</b>	<b>20,000</b>	<b>21,400</b>

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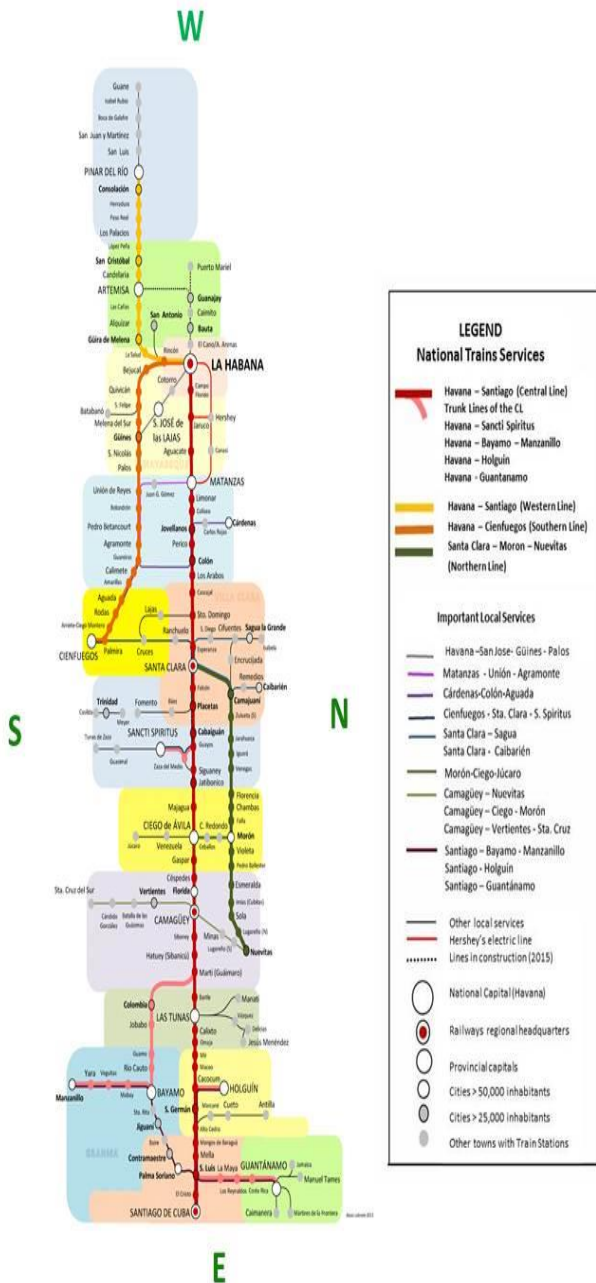
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Sketch of Cuba's Cargo & Passenger Lines