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TRANSPORT AND LOGISTICS

IN CROATIA

FLANDERS INVESTMENT & TRADE MARKET SURVEY

TRANSPORT AND LOGISTICS IN CROATIA

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Yazmin Vallejo Sarmiento, Ivan Vandija, Marija Grsetić

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Executive Summary

This research intends to show what the current position of Croatia is in terms of transport and logistics. As it is known, Croatia became independent in 1991, and since that time all its efforts have been focused on reconstructing the country. These efforts are most reflected in the level of development reached currently in all economic sectors.

The transport sector counts for 8% of the total GDP of Croatia. There are three main branches: ground, water and air transport. They differ from each other in many aspects.

Ground transportation has also two branches: road transport (cars, buses and public transportation) and railroad transport. The road transport is highly developed and almost all the roads meet the European Union standards and safety measures.

The railroad sector is poorly developed and there are still huge infrastructure lacks. A lot of work can be done in this sector in order to reach better standards. Currently, major work is being done on those routes that are part of important corridors for international transport to increase line speed and capacity.

Water transport is one of the most important activities in the country and one of the crucial activities in the general economy. Water transport includes sea ports, river transport and pipelines. Croatia has 3 big main ports that are very important for foreign investment: Rijeka, Split and Ploče. As of recent, major plans are discussed for the revitalization of river transport which is stagnant and underused. A river port of international significance is Port Vukovar on the Danube.

Air cargo only represents an insignificant part of goods transport. Air passenger transport is fairly well developed and over past decade there is a constant increase in the number of passengers and investments in infrastructure were undertaken to increase the capacity, especially in summer months (tourist season).

In the field of logistics, the situation in Croatia has improved over the last couple of years and education in the field is available, but it is still regarded as a new business for the country.

CROATIA OVERVIEW



As communism collapsed throughout Eastern Europe and Yugoslavia began to unravel along ethnic and religious lines, Croatia declared its independence in 1991. Years of conflict between Croats and Serbs ended formally in 1995 with the Dayton Peace Accords. From that time the country underwent the transition process to a market economy. Croatia became a member of NATO in April 2009, completed accession negotiations with the European Union in June 2011, and entered in July 2013.

Source: www.vlada.hr

Geography

Area: 56,542 sq. km (22,830 sq. mi)

Border countries: Bosnia and Herzegovina 932 km, Hungary 329 km, Serbia 241 km, Montenegro 25 km, Slovenia 455 km.

Climate: Mediterranean and continental; continental climate predominant with hot summers and cold winters; mild winters, dry summers along coast

Terrain: geographically diverse; flat plains along Hungarian border, low mountains and highlands near Adriatic coastline and islands.

Natural resources: oil, some coal, bauxite, low-grade iron ore, calcium, gypsum, natural asphalt, silica, mica, clays, salt, hydropower.

People

Population: 4.46 mio (July 2015 est.)

Ethnic groups: Croat 89.6%, Serb 4.5%, other 5.9% (including Bosniak, Hungarian, Slovene, Czech, and Roma) - (2011 census).

Religions: Roman Catholic 87.8%, Orthodox 4.4%, other Christian 0.4%, Muslim 1.3%, other and unspecified 0.9%, none 5.2%

Languages: Croatian 96%, other 4% (including Italian, Hungarian, Czech, Slovak, and German)

Literacy: age 15 and over can read and write total population: 98.1%. Male: 99.3%. Female: 97.1%

Political profile

Government: Parliamentary Democracy

Head of State: Kolinda Grabar-Kitarović

Membership of International Organisations: United Nations, Organisation for Security and Co-operation in Europe, Council of Europe, Regional Cooperation Council, International Monetary Fund, World Bank, World Trade Organisation, European Bank for Reconstruction and Development, Partnership for Peace, NATO

Accession to the European Union: 1st July 2013 – 28th Member State

General data

Population: 4,464,844 (July 2015 est.)

Main cities: Zagreb (Capital), Split, Rijeka, Osijek

National currency: Kuna

GDP: €43.921 billion (2015 est., source – Croatian National Bank)

GDP per capita: €10,364

GDP - composition, by sector of origin:

- agriculture: 4.3%
- industry: 26.7%
- services: 69.1% (2015 est.)

VAT: 25%

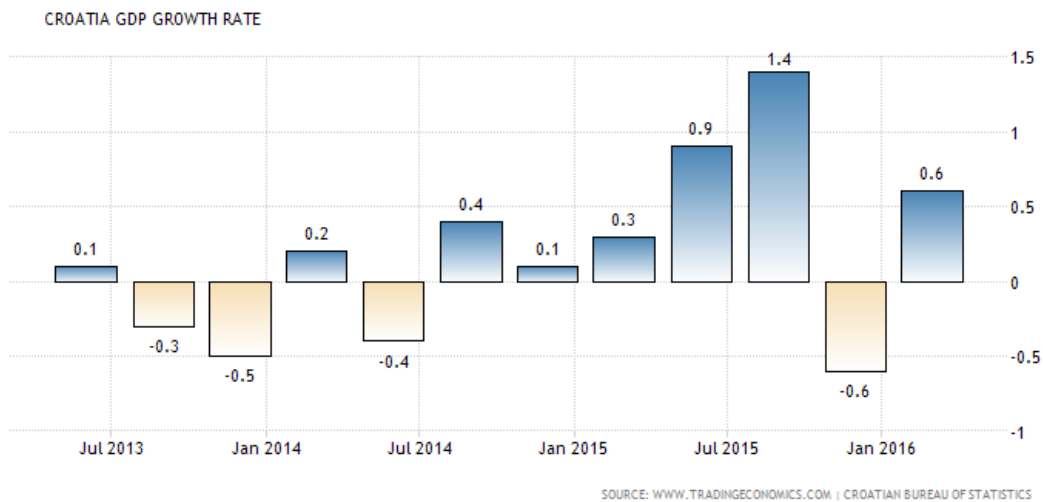
Unemployment rate: 16.3%

Major export countries: Bosnia and Herzegovina, Slovenia, Italy, Serbia.

Source: www.heritage.org/index/country/croatia

Economic profile

Real GDP growth rate



The Gross Domestic Product (GDP) in Croatia advanced 0.6% in the first quarter of 2015 over the previous quarter, compared to a downwardly 0.6% contraction in the previous period. The GDP growth rate in Croatia averaged 0.35% from 2001 until 2015, reaching an all time high of 4.20% in the first quarter of 2008 and a record low of -3.70% in the first quarter of 2009. The growth rate is reported by the Croatian Bureau of Statistics.

Balance of trade



Croatia recorded a trade deficit of 4146.70 HKR million in May of 2016. Croatia's trade balance averaged -3541.99 HKR million from 1993 until 2016, reaching an all time high of 502.62 HKR million in August of 1993 and a record low of -8379.31 HKR million in April of 2008. Trade balance information is reported by the Croatian National Bank.

Croatia unemployment rate



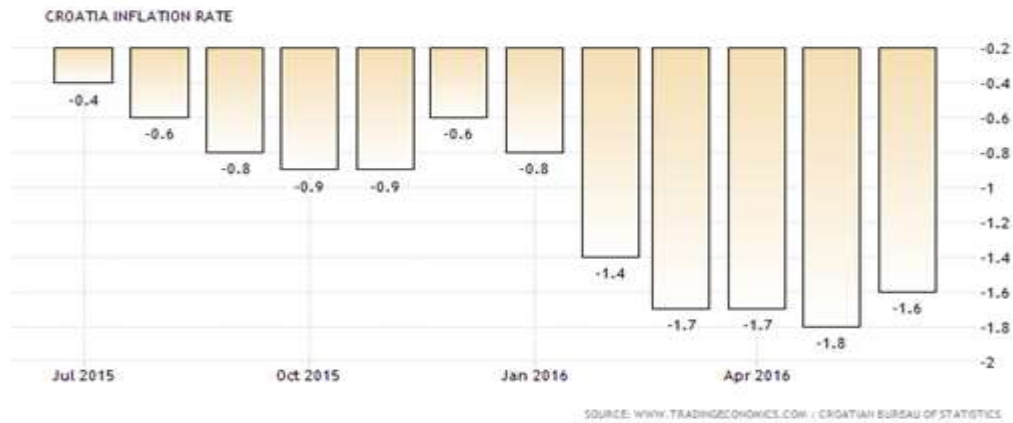
The unemployment rate in Croatia decreased to 13.60% in June 2016 from 14.40% the previous month, reaching thus the lowest level since December 2008. The unemployment rate in Croatia averaged 18.18% from 1996 until 2016, reaching an all time high of 23.60% in January 2002 and a record low of 12.20% in July 2008. The unemployment rate is reported by the Croatian Bureau of Statistics.

Croatia government debt to GDP



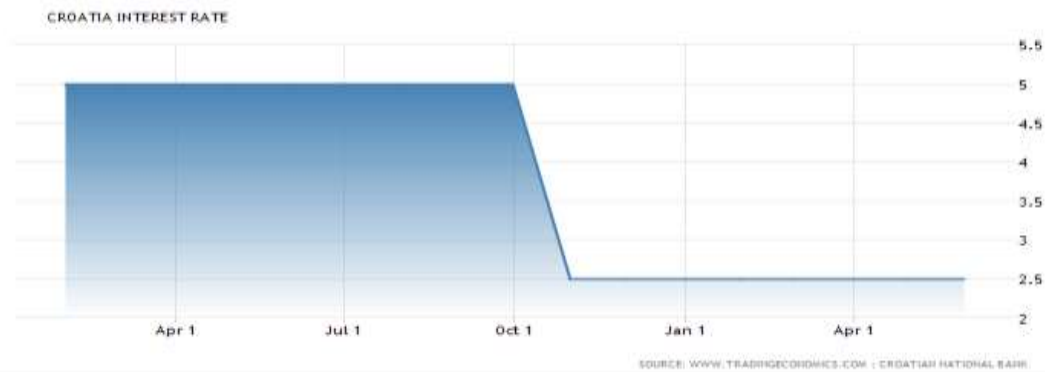
Croatia recorded a government debt to GDP of 86.70% in 2015. Government debt to GDP averaged 52.70% from 2000 until 2015, reaching an all time high of 86.70% in 2015 and a record low of 35.50% in 2000. Government debt to GDP is reported by the Croatian National Bank.

Croatian Inflation Rate



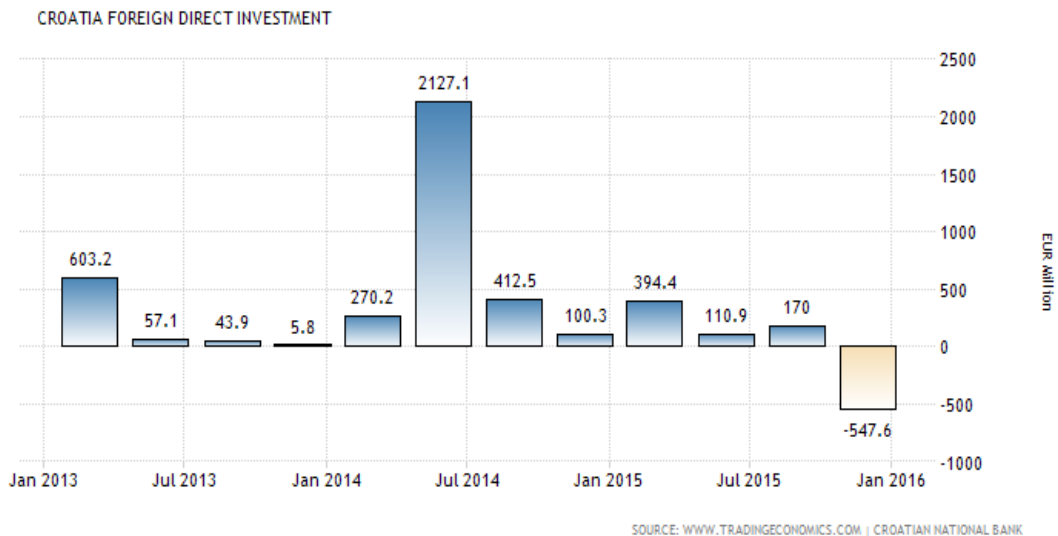
Consumer prices in Croatia went down 1.6% year-on-year in June of 2016, following a 1.8% decrease in the previous month. Prices fell the least since February, as costs declined at a slower pace for housing and utilities (-2.6% from -3.3% in May) and transport (-6.2% from -7.7% in May). In contrast, prices of food and non-alcoholic beverages (-0.4% from -0.3% in May) dropped further. On a monthly basis, consumer prices edged down 0.1%. The inflation rate in Croatia averaged 2.50% from 1999 until 2016, reaching an all time high of 8.43% in July 2008 and a record low of -1.80% in May 2016. The inflation rate is reported by the Croatian Bureau of Statistics.

Croatia interest rate



The benchmark interest rate in Croatia was last recorded at 2.50%. The interest rate in Croatia averaged 93.36% from 1992 until 2016, reaching an all time high of 4290.85% in September 1993 and a record low of 2.50% in October 2015. The interest rate is reported by the Croatian National Bank.

Foreign direct investment in Croatia



Foreign Direct Investment in Croatia decreased by € 547.60 million in the fourth quarter of 2015. They averaged € 409.56 million from 2000 until 2015, reaching an all time high of € 2127.10 million in the second quarter of 2014 and a record low of € -547.60 million in the fourth quarter of 2015. Foreign Direct Investment is reported by the Croatian National Bank.

HRK/EUR Exchange rates



The Croatian currency is kept stable in relation to the Euro by the Croatian National Bank. Typically, relatively larger fluctuations happen with seasonal changes, in summer due to touristic season and during winter due to energy prices. The daily exchange rate is reported by the Croatian National Bank.

Source: www.tradingeconomics.com/croatia/indicators

Economic environment overview

Croatia's economy has experienced a deep transformation since 1991 when the country got its independence. From that time, it went through structural reforms to become a market economy. After fulfilling the necessary requirements Croatia became member of the European Union in 2013. Until the global economic recession, the economy enjoyed macroeconomic stability with relatively high growth, low inflation, a stable exchange rate

and falling unemployment. The budget operated a surplus of HRK 3.6bn in 2007, largely thanks to proceeds from the privatization of the state-owned telecoms company. But the underlying budget deficit remains around 3% of GDP. The state still plays a significant role in the local economy and unemployment (9% according to ILO criteria) is high.

In 2015, Croatia finally came out of its six-year long recession. Between 2008 and 2014, GDP shrunk by more than 12% in real terms and unemployment surged from below 9 % to more than 17%. The situation started to improve at the end of 2014, and in the course of 2015 real GDP growth surpassed expectations. Economic activity was expected to have expanded by 1.8% in 2015. The external sector performed strongly, and Croatia recovered some of the lost market shares. Growth was however mainly driven by the rebound in consumption and, to some extent, investment.

The recovery is set to strengthen over the next couple of years, but risks remain. By 2017, GDP growth is forecast to attain 2.1% and unemployment to contract to below 14%, while the current account surplus should stabilize at around 3% of GDP. The external sector is expected to continue to contribute to this positive performance, but the main driver of growth will be internal demand. Investments, in particular, are set to start growing more robustly, on the back of an increased absorption of EU structural and investment funds.

Nevertheless, growth is projected to remain subdued for a catching up economy and it will take several years before output returns to pre-crisis levels. In a low inflation environment, high government and private debt, jointly representing more than 200% of GDP in 2014, public and private investment as well as household consumption will continue being constrained. Eventually, however, the economy is set to return to its long-term potential growth, currently estimated at below 1%.

Source: ec.europa.eu/europe2020/pdf/csr2016/cr2016croatiaen.pdf

CROATIAN ECONOMIC ENVIRONMENT SWOT ANALYSIS

| | STRENGTHS | WEAKNESSES | OPPORTUNITIES | THREATS |
|--------------------------------------|---|--|---|--|
| GOVERNMENT INSTITUTIONS | Low costs and threat of terrorism, crime and violence. | Wasteful budgetary spending, low public trust in politicians, lack of transparency, regulative burden on business freedom. | Improving the ethics, increasing transparency, introducing informatisation. | Political changes. |
| INFRA-STRUCTURE | Well developed highway roads and telecommunications. | Underdeveloped local roads, lack of sustainable planning. | Increasing investments in ports, railways, airports and other transportation infrastructure. | |
| MACRO-ECONOMIC ENVIRONMENT | Low annual inflation rate. | Low GDP growth rate, slow recovery from global crisis. | Decreasing accumulated government debt, decreasing trade balance deficit. | Volatile external environment, fiscal vulnerability. |
| HIGHER EDUCATION AND TRAINING | Competitive advantages are mathematics and science education. | Low availability of research and training services. | Educational reform focused on flexible skills based curriculum. | |
| GOODS MARKET EFFICIENCY | Short business registration period, relatively low profit taxation. | Expensive agricultural policy, overregulated business environment, weak local competition. | Reducing standard VAT rate, developing business climate, protection against monopolies and cartels, implementing privatisation. | |
| LABOR MARKET EFFICIENCY | | „Brain drain“. | Increasing labor market flexibility by easy rule on hiring and firing workers. | Political changes. |

| | | | | |
|--|--|---|---|-------------------------|
| FINANTIAL MARKETS AND DEVELOPMENT | | Low venture capital availability. | Easier loan access for entrepreneurial activities and investments. | External vulnerability. |
| TECHNO-LOGICAL READINESS | | Low technology absorption in firms. | Increasing foreign direct investment for new technologies. | |
| BUSINESS SOPHISTICATION | | Low number of quality local suppliers, low production process sophistication. | Cluster development, specialisation, establishing economic diplomacy. | |
| INNOVATION | Quality of scientific research institutions. | Low level of university-industry collaboration in research. | Developing closer ties between industry and university. | |

Source: made by authors

| STRENGTHS | WEAKNESSES |
|---|--|
| <ul style="list-style-type: none"> - stable exchange rate and relatively low inflation - liberalised access to the EU market - favourable geographic location - preserved natural environment - high quantities of water resources - relatively low level of GHG emissions - increasing number of SMEs over the past years - investment in business related infrastructure - Croatia perceived as desirable tourist destination - rich cultural and historical heritage - preserved environment and nature - landscape diversity - raising efficiency in the health sector - improved social service decentralisation - inclusion of private profit and non-profit actors in social services provision - employment rate increase and unemployment rate decrease during the last couple of years - experience in employment policy's active measures programmes - increasing number of entrepreneurs - strong awareness about importance of human resources development among the relevant stakeholders - expertise and decision-making regarding public administration reform located in one place - judiciary and public administration reform in progress | <ul style="list-style-type: none"> - persistent fiscal deficit , high current account deficit and growing external debt - slow privatization process and implementation of structural reforms - unbalanced development of infrastructure due to emphasis on road infrastructure development - undeveloped ICT networks, services and their penetration in rural and lagging regions - insufficient level of environment protection and integration in sectoral policies - underdevelopment of waste and water infrastructure and management services - high dependency on non-renewable energy sources and on energy import, and low level of energy efficiency - unbalanced regional growth and development, and growing regional disparities - underdeveloped entrepreneurial activities in the disadvantaged counties - insufficiently utilised tourist potentials of the continental part of the country with unfavourable structure of total quality and type of accommodation - extensive damage of cultural and historical heritage in the disadvantaged regions - R&D and high tech sectors lag behind European and other international competitors - low level of productivity, innovative, high quality and high added value production of SMEs - the majority of investment in science and research allocated by public sector - underdeveloped social services market - disparities among standards of public health care and poor quality of basic public health care standards - high share of long term unemployed facing social exclusion - relatively low level of labour productivity - insufficiently developed educational, employment and civil society intersectoral networks - suboptimal efficiency of public administration and judiciary - inadequate skills and career management paths of human resources in public administration and judiciary - corruption practices in political and socio-economic life |
| OPPORTUNITIES | THREATS |
| <ul style="list-style-type: none"> - broad political consensus about the need for the fiscal consolidation - Croatia's EU accession makes investments more attractive - development of more environmentally friendly means of transport, and waste and water infrastructure - SME associations and networks, clusters and cluster initiatives, business supporting infrastructure - more focused support of SMEs on growth of productivity, quality and higher added value production - potential for exploitation of renewable energy sources and increase of energy efficiency - historical and natural characteristics of the regions for tourism - potential for sustainable long-term development of the regions - attracting external development financing in the form of FDI - civil society strengthening - accelerated transfer of knowledge through a common approach to the market - improvement of institutional and administrative capacity leading to enhanced implementation of national developmental policies | <ul style="list-style-type: none"> - occurrence of global economic crises and spill over effect on the real sector of the domestic economy - rising oil prices and insecurity of gas supply - deterioration of transport infrastructure due to insufficient sources of financing and depopulation - unsustainable development of economy through neglect of environment aspects - trend of continuous loss of biodiversity and loss of habitats - imports of pollution - loss of competitive position on European market - growing differences in basic socio-economic characteristics at regional level - continuation of the process of depopulation of regions lagging behind - high dependence on tourism revenue - aging population and poor demographic structure as well as drain of highly qualified workforce abroad - insufficient cooperation between universities, research institutions and the business sector - political will for the necessary structural reforms - fatigue with long-lasting institutional and administrative reforms |



Introduction to the Transport Sector in Croatia

Transport in Croatia relies on several modes, including transport by road, rail, water and air. Road transport incorporates a comprehensive network of state, county and local routes supplemented by a network of highways for long-distance travelling. Water transport can be divided into sea - based on the ports of Rijeka, Ploče, Split and Zadar -and river transport, based on Sava, Danube and, to a lesser extent, Drava. Croatia has 9 civil airports, seven of which are international. The country also has several airlines, of which the most notable is Croatia Airlines. Rail transport is fairly developed, with dual track and electrification not very common, although high(er)-speed trains are used on some routes. However, the bus still tends to be more common than rail as a mode of inter-city transport.

Transportation Networks and Accessibility of the Regions

After attaining the accession country status in June 2004, Croatia benefited from various pre-accession instruments, provided by the European Union, relevant to the transport sector, namely ISPA (Instrument for Structural Policies for Pre-Accession) and IPA (Instrument for Preaccession Assistance) that had a big impact on the Croatian transport sector. In order to ensure an uninterrupted structural adjustment process in the transport sector and the utilisation of the finance under the IPA Component III – Regional Development, Croatia drafted a Transport Operational Programme (TOP) for the period 2007-2013. The TOP covered the key issues and information such as the transport policy background, status of transposition of EU transport acquis into national legislation, transport sector assessment and strategies and measures to meet transport sector development needs, in line with the accession and post accession requirements.

Croatia also maintained an active role in the cooperation under the Memorandum of Understanding on development of the South-East Europe Core Regional Transport Network and the implementation of the multi-annual development plan for 2011-2015 for the South East Europe Transport Observatory (SEETO).

Croatia revised its Transport Development Strategy with the development of the National Traffic Model (NTM). In 2016, once the NTM will be elaborated and key results available, the 2014 Strategy will be assessed and updated if necessary. Later revisions of the Strategy will be made as a preparation for the EU upcoming programming periods but also in case any significant impacts to the transport sector arise in the future.

The strategy has taken into account the concern for sustainable development and displays a great sensitivity to environmental concerns and criteria. As a result, it constitutes a decisive commitment to the future of the Republic of Croatia, to its economic development and its competitiveness, to its social and territorial cohesion and to the improvement of the quality of life of its citizens, with a set of measures designed to create a transport system which is more integrated, safer, efficient and respectful of its environment.

As far back as 2000, within the framework of the Stabilization and Association Process, Croatia started its active international and regional activities in order to improve traffic and transportation links with the neighboring countries. The South East Europe Transport Study TIRS (2000) and the Regional Balkan Infrastructure Study - REBIS (2003) were produced with the assistance of EU funds. REBIS determined the South East Europe basic transport network.

As the signatory of the Memorandum of Understanding on the development of the South East Europe Core Regional Transport Network on 11 June 2004, the Republic of Croatia is committed in the implementation of transport projects defined in the multimodal Core Transport Network for South East Europe. This core network is based in part on the alignment of the relevant Pan-European Corridors (notably Corridors V, VII, VIII and X). As a SEETO Participant, Croatia has been involved in the preparation of the Five Year Multi Annual Plan 2010–2014. Moreover, according to EC regulations, the Cohesion Fund supports the preparation and the implementation of transport projects which are linked with the TEN-T corridors. So, it is clear that Croatia is proposing to co-finance priority projects that are part of Pan-European corridors, from EU and from national resources.

- **Railway Network**

The Croatian railway network comprises 2.604 km and presents a good ratio of railway kilometres over the population of the country, 1.556 people per kilometre, close to countries like Switzerland and higher than others like the Czech Republic or Hungary. However, 90% are single track lines and only 36% of lines are electrified. Almost 55% of the network is dedicated to lines that are significant for international transport. Of these 2.604 km, only 5,4% is capable to reach speeds between 141 and 160 km/h, 17% has a maximum speed above 100 km/h, and 37,5% has maximum speeds below 60 km/h.

RAILWAY NETWORK MAP:



Source: hr.wikipedia.org/wiki/Datoteka:Railroads_in_Croatia.gif

International Railway Corridors:

- TEN-T core and comprehensive network (Pan European Corridor X), Salzburg – Thessaloniki
- TEN-T Mediterranean corridor (Pan European corridor Vb), Budapest – Rijeka
- TEN-T comprehensive network (Pan European corridor Vc), Budapest – Ploče

Railway sector priorities:

- Modernisation of the remaining sections of the TEN-T core network lines according to their functionality,
- Analysing the potential to increase the use of railways for commuters in Zagreb and Rijeka and implement the measures defined through the Strategy
- Increase the sustainability of the railway network by performing a reorganisation of the sector, improve the efficiency of the maintenance, reduce the environmental impact and implement measures to increase the safety and the interoperability of railways,
- Modernisation of local and regional lines with the objective of creating preconditions for the development of an integrated public transport system.

- Inland Waterways and Inland Ports Network

The Croatian network of inland waterways is significant, but at the same time, completely unexploited. The overall length of the current inland waterways in Croatia is 1016.8 km, of which 601.2 km have been integrated into the European network of inland waterways of international importance. The Danube part of the Republic of Croatia's inland waterways system forms a part of the Rhine-Danube Corridor. The ports of Vukovar and Slavonski Brod are classified as core ports in the EU TEN-T network, while Osijek and Sisak are classified as comprehensive ports.

Within the complete inland waterways sector in the Republic of Croatia there are two separated sub-systems with their specific characteristics: the Danube's basin sub-system which encompasses the Danube's waterway as well as Drava's waterway, and the Sava basin sub-system which encompasses the waterways of the Sava, Kupa, and Una. The Croatian inland waterways ports Vukovar, Osijek, Slavonski Brod and Sisak and their port areas have been characterised by an undeveloped infrastructure and unconnected logistical port network.

PRIORITIES OF CROATIAN INLAND WATERWAYS:

- Establishing and maintaining conditions for safe and reliable inland navigation, especially to maintain international waterways according to the required international navigational class standard.
- Developing and modernising international inland ports according to international standards in order to satisfy the existing and expected transport demand.
- Increase the sustainability of the system by performing a reorganisation of the sector, improving the efficiency of the maintenance, reducing the environmental impact and implementing measures to increase the safety and the interoperability of the system.
- Improve the accessibility of the ports and their connections to other transport modes to facilitate the development of multi-modal transport.

ROAD NETWORK:

Regarding its integration in international traffic, it should be emphasized that Croatia is already today, with its highly developed motorway network (90% constructed), close to high European standards regarding international road connections.

INTERNATIONAL ROAD CORRIDORS:

- TEN-T Mediterranean corridor/PanEuropean corridor
- Vb: Rijeka-Zagreb-Budapest; TEN-T comprehensive network/Pan-European corridor
- Vc: Ploce- Sarajevo- Osijek- Budapest; TEN-T core network/Pan-European corridor
- X: Salzburg- Ljubljana- Zagreb- Beograd- Niš- Skopje- Veles-Thessaloniki
- TEN-T comprehensive network/Pan-European corridor
- Xa: Graz- Maribor- Zagreb

It is also necessary to analyse and determine the real need and sustainability of building a bypass in the Zagreb Area, which would interconnect the highway network (A1, A2, A3, A4 and A11) and by this would improve connection between different corridors.

ROAD NETWORK MAP:



PRIORITIES OF THE ROAD SECTOR:

- Completion of the modernisation of the remaining sections of the TEN-T core network lines according to their functionality,
- Improving connectivity of Dubrovnik with the rest of Croatian territory and with the neighbouring countries,
- Increase the sustainability of the road system by performing a reorganisation of the sector, increase the efficiency of the maintenance of the network, reduce the environmental impact (especially the reduction of greenhouse gas emissions) and implement measures to increase the safety and reduce the influence of the seasonal constraints,
- Improve the accessibility to ports, airports and other relevant modes considering local and regional transport needs.
- **MARITIME TRANSPORT NETWORK**

Today, Croatian ports annually reloaded about 21 million tons of cargo and transported more than 13 million passengers (data for 2015). Croatian ports are integrated into a comprehensive network of European transport corridors, which represents a growth potential that allows the inclusion of trade flows to the intra-European and world markets, as well as the transformation of port systems in modern logistics and distribution of

economic centres.

| <i>Maritime Transport Statistics (year)</i> | 2015. | 2014. | 2013. |
|---|--------------|--------------|--------------|
| <i>CARGO ('000 tones)</i> | 21 376 | 20 335 | 24 744 |
| <i>PASSANGERS ('000)</i> | 13 082 | 13 029 | 12 770 |

Source of data: www.dzs.hr

Six major ports (Rijeka, Zadar, Sibenik, Split, Ploce and Dubrovnik) are located along the mainland coast and all are declared ports of special (international) economic interests for the Republic of Croatia. Croatian seaports are conveniently positioned to facilitate maritime transport between Central and Eastern Europe and Southern Asia, Australia and Oceania and Europe (via the Suez Canal). They enable a shortening of voyages by 5 to 8 days, or by a minimum of 2 000 km compared to north European ports. Currently on EU market, Adriatic ports take only 3% of total freight. Therefore, there is a large potential to increase freight transport of all Adriatic ports.

The further development of the ports of Rijeka and Ploce depends partially on the development of their connections to the railways. The most important common interest project for the cargo maritime sector is the development and reconstruction of the railway section from Rijeka to Hungary while further railway development in Bosnia and Herzegovina is of crucial importance for the development of the port of Ploce. The ports of Pula, Zadar, Sibenik, Split, Dubrovnik and Ploce are classified as comprehensive ports on the TEN-T Network.

PRIORITIES OF MARITIME TRANSPORT SECTOR:

- Specialisation of the ports according to the demand potential,
- Increase the sustainability of the system by performing a reorganisation of the sector, improving the efficiency of the maintenance, reducing the environmental impact and implementing measures to increase the safety and the interoperability of the system,
- Improve the accessibility of the ports and their connections to other transport modes to facilitate the development of multi-modal transport.

- **AIR TRANSPORT NETWORK**

The historical legacy and political, market and financial circumstances resulted in one main national airline, Croatia Airlines, a member of Star Alliance.



| <i>Airport Traffic Statistics</i> (year) | 2015. | 2014. | 2013. |
|---|-------|-------|-------|
| <i>FREIGHT</i> (t) | 7 766 | 7 567 | 7 569 |
| <i>PASSANGERS</i> (‘000) | 7 175 | 6 703 | 6 304 |

Source of data: www.dzs.hr

CIVIL AIRPORTS: 9 (total)
INTERNATIONAL AIRPORTS: 7
 Airline companies: 3 (2016.)

- Modernisation of Zagreb Pleso as the core airport of the Republic of Croatia and the Dubrovnik airport due to the need to improve accessibility of the Dubrovnik region,
- Adaptation of the relevant airports to the required safety and traffic management European requirements, to cope with the demanding seasonal peaks and to prepare airports to the potential adhesion of Croatia to the Schengen treaty,
- Increase the sustainability of the aviation system by performing a reorganisation of the sector, increasing the efficiency of the maintenance of the airports and reducing the environmental impact,
- Improve the accessibility to airports, especially by means of public transport.

- **URBAN, SUB-URBAN AND REGIONAL TRANSPORT NETWORK**

In 2015, road transport accounted for 71% of all passenger transport (29% railways) in category of inland transportation. An increase in the number of registered cars, passenger car mileage and the general use of passenger cars has been observed at the same time as usage decrease of public transport options.

The predominance of private transport is made evident by the big traffic jams on access roads towards urban centres, which contribute to increased pollution and noise levels, lack of parking space and rising costs for citizens. At present, public transport in the Republic of Croatia is not integrated, as there are no coordinated timetables or single tickets for different modes of transport. Intermodal terminals, which enable transit from one mode

of transport to another, do not exist or are extremely rare. On certain lines, bus and rail carriers have "parallel routes". The contribution of rail transport is penalized by the fact that average age of the rolling stock is close to the end of its service life, while in road transport; the average age of buses is approximately 15 years. Public transport services exist in the areas of the major cities such as Zagreb, Rijeka, Osijek, Split and their agglomerations, as well as Varaždin, Karlovac, Zadar and Pula. Public transport by tram is conducted in Zagreb and Osijek, while public transport by railway is conducted in Zagreb and Split. In inland waterways navigation, public passenger transport for the purpose of daily migrations does not exist, while public transport in the maritime sector is focused on the connection of islands with the mainland.

PRIORITIES:

- Establishing integrated transport systems in the main cities and their suburban and/or regional areas
- Developing measures to increase the share of public transport and zero emission modes such as P&R, restriction to private traffic in the centres of the cities, prioritisation for public transport through ITS systems, etc.
- Increase the sustainability of the system by performing a reorganisation of the sector, reducing the environmental impact and implementing measures to increase the safety of the system.

Source: www.mppi.hr/UserDocImages/TR-DEVL_P STRAT-M-DOC3010-14 FINAL 25-12_15.pdf

Transport Sector Overview

According to the World Bank transport in Croatia has a crucial role in international trade which has become more important since independence in re-establishing profitable transit traffic, promoting tourism and unifying the country.

Transport demand and necessities have changed after the EU accession.

Most of the traffic is now international and flows are re-oriented towards Western Europe. Serbia and Slovenia do no longer use the Port of Rijeka to a significant degree. EU Corridor 10 (via Belgrade), blocked since the war, is only now reopening as is transit traffic through Bosnia Herzegovina. Currently, Croatia placed emphasis on EU Corridor 5 (Rijeka-Zagreb-Hungary), which competes with a parallel corridor in Slovenia. The growth of private automobiles stalled during and after the war, but has now resumed; traffic congestion and pollution are increasing in Zagreb. As a combined result, maritime,

CROATIA'S TRANSPORT SYSTEM

29,500 km of classified interurban roads

22,000 km of local roads

2,726 km of railway network

- 1000 km electrified

- 250 km double track

2 main sea ports (Rijeka, Ploce)

5 secondary sea ports

River ports on 918 km of Sava and Drava rivers

2.5 million deadweight tons (DWT) river and ocean-going vessel capacity

9 international airports

port and river transport have fallen dramatically, while truck and airline traffic in particular have grown

As a result, Croatia's existing transport infrastructure provides ample capacity with few exceptions for the near future. The railway carries less than a third of its pre-war traffic volume, and rail traffic is not expected to reach pre-war levels for a long time – at best around 2020 according to optimistic forecasts. Even then, more than 90% of rail traffic would be carried out on routes adding up to less than 50% of the system, a clear indication of where and by how much the system needs to be reduced. Road traffic densities are also low, with only about 120 km carrying 15,000 vehicles per day (vpd) or more.

Croatia is also very well equipped with airports of various sizes and standards. There are, for example, seven airports that can receive wide-body aircraft while only three or four are needed.

The World Bank's assistance to Croatia was focused on reconstruction and restructuring activities because of the destruction of war in the early 1990's and the need to modernize transport institutions. Beyond reconstruction, the Bank's assistance for financing infrastructure investments was requested by the Government for railways, roads and ports including investments for facilitating trans-border trade and transport.

The Railway Modernization Project has been assisting the Government and Croatian Railways to restructure the company, including reductions in the labor force and related social measures, gradual privatization of non-core businesses and sustainable reductions of central budget subsidies. Efficiency measures were under way, including cutbacks in non-economic services, improving Croatian Railway's financial standing and reducing the need for fiscal transfers in the future.

Ongoing projects

The Rijeka Gateway Project aims at increasing Croatia's trade competitiveness by improving the international transport gateway through Rijeka.

Specific objectives include:

- Increasing efficiency and improving environmental and social conditions at Rijeka Port by preparing to privatize port operations, rehabilitating infrastructure and replacing equipment,
- Improving the financial performance of Rijeka Port with a view to reducing government contributions in the medium term,
- Preparing to redevelop part of Rijeka Port for urban purposes,
- Improving international road connections linked to the Rijeka gateway, and the administration of the road sector.

The project includes rehabilitation and construction works at the Rijeka port, construction of the western part of the Rijeka bypass and connecting road to the port, rehabilitation of Krk bridge, rehabilitation of a section of the Zagreb-Macelj motorway, elimination of black spots, the purchase of port equipment and software for the Port of Rijeka Authority and the Luka Rijeka port operator, and redundancy payments and a social program for surplus Luka Rijeka workers. Technical assistance aims at preparing to privatize port terminal operations, preparing for urban redevelopment of a port area, assisting Croatian Motorways to obtain an ISO 9002 certification and satisfactory bond rating, assisting

Croatian Roads to implement the pavement and bridge management systems and to enforce axle load regulations.

Zagreb Pier Container Terminal Project – a cargo terminal is being built as part of the ongoing project and is to be completed by 2017. Upon the completion of the first stage of the project, the terminal's annual transloading capacity will be 400,000 containers, and after it is extended, the terminal will be able to handle 650,000 containers a year. It includes the construction of a 280 metre quay wall extension, the reconstruction of the cargo section of the Rijeka railway station and the construction of an intermodal yard.

Source:

www.vlada.gov.hr/news/new-container-terminal-in-rijeka-port-to-be-completed-in-2017/16255
www.portauthority.hr/en/development_projects/rijeka_gateway_project

Krizevci-Koprivnica-Hungarian Border railway project includes the modernisation and construction of a second 43.2 kilometre track of the Krizevci-Koprivnica-Hungarian Border railway line, for which € 241.3 million in EU co-financing is earmarked. The railway route is part of Mediterranean corridor, one of the nine corridors of the Trans-European Transport Network (TEN-T).

The document preparation project is worth € 5.3 million, of which 85% will be covered with EU funds. The project will be prepared over the next three years in cooperation with foreign partners, and work on the reconstruction of the existing track and construction of a new one is expected to begin in 2016.

Source:

www.mppi.hr/default.aspx?id=9827
www.railjournal.com/index.php/europe/reviving-a-war-torn-network.html
www.total-croatia-news.com/item/13136-12-large-transportation-projects-draw-306-million-euro

Svilaj Bridge Project The contract for construction of the Svilaj bridge across the Sava river at Corridor Vc was signed on July 15, 2016. The bridge shall be built at the Motorway A5, in Croatia, at the section from Sredanci to the border crossing with Bosnia and Herzegovina and in Bosnia and Herzegovina at the section from Odžak to the border crossing of the Republic of Croatia. The planned completion period is two years starting from site installation and initiation of the works by the contractors, the companies Viadukt and Hering. The value of works according to the tender was € 22,308,022.34 exclusive of VAT, and Hrvatske Ceste have applied for co-financing of a portion of the construction costs from EU funds in ratio of 85%..

Source: www.viadukt.hr/signing-of-contract-for-construction-of-bridge-svilaj

Other transport projects:

- CoRISMa cross border cooperation for data exchange
- SESAR programme implementations
- EAST-E development of of electric vehicle-related infrastructure
- Crocodile II coordinated traffic management project.

Source:

ec.europa.eu/inea/en/connecting-europe-facility/cef-transport/projects-by-country/croatia

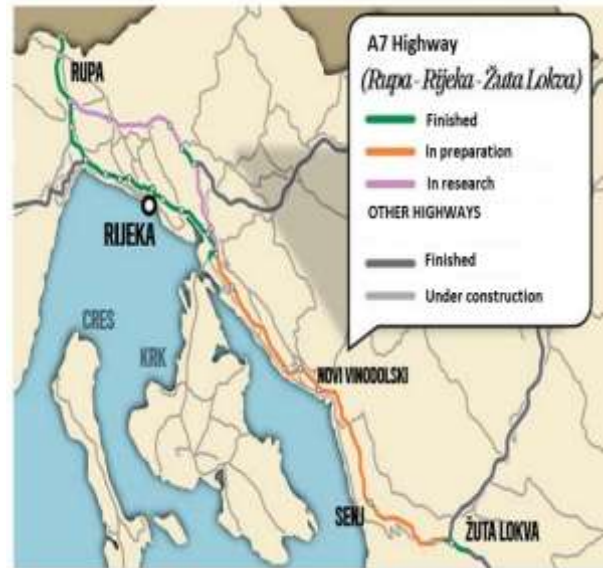
www.total-croatia-news.com/item/13136-12-large-transportation-projects-draw-306-million-euroconnecting-europe-facility-croatia-to-receive-e306-million-for-12-transport-projects

Planned projects

A7 Highway (Rupa-Rijeka-Zuta Lokva): 56 kilometers long continuation (marked orange) to be built is split into three parts:

- Krizisce-Novı Vinodolski (25,2km)
- Novi Vinodolski-Senj (16,3km)
- Senj-Zuta Lokva (15km).

Financing plans state construction will be financed via concession (public-private partnership). No begin date has been stated yet.



Related Links

Transport Development Strategy of Republic of Croatia (2014-2030)

The Strategy sets out the basic guidelines for the development of the transport sector within the Republic of Croatia over a medium and long-term horizon (2014-2030), aiming to define an overall and coherent framework to ensure the linkage of infrastructure and transport policy and enabling decision making.

Source: www.mppi.hr

General Transport Statistics of Croatia

This website provides general statistics of the transport sector in Croatia in all of its categories (Ground, Water and Air Transportation)

Source: www.nationmaster.com/red/country/hr-croatia

The World Bank: Documents about transportation

World Bank website provides some documents about projects in Croatia in the transport sector.

Source: www-wds.worldbank.org

Croatian quarterly transport statistics

www.dzs.hr/Eng/Publication/2009/5-1-5_2e2009.htm

Regulation Dependencies of Croatia

Transport in Croatia is regulated by the Ministry of the Sea, Transport and Infrastructure.

| | | | | | | |
|---|-----------------------------|--|--|---|------------------------------------|--|
| Cabinet of the Minister | | | | | | |
| Secretariat-General | | | | | | |
| Independent Public Relations Service | | Independent Internal Audit Service | | Independent Department for European Affairs | | |
| Directorate for Maritime and Inland Navigation, Shipping, Ports and Maritime Domain | Maritime Safety Directorate | Directorate for Road and Railway Traffic | Directorate for Air Traffic, Electronic Communications and Postal Services | Directorate for Transport Inspection | Directorate for Budget and Finance | Directorate for Transport Infrastructure |

Ministry of the Sea, Transport and Infrastructure

Prisavlje 14, 10000 Zagreb, Croatia

Tel. +385 16 169 111

www.mppi.h

AIR TRANSPORT IN CROATIA

There are international airports in Zagreb, Zadar, Split, Dubrovnik and Rijeka (on the island of Krk). Recently, Osijek Airport in Slavonia has been renovated for regional traffic. Pula Airport (Istria) was renovated as a destination for low cost airlines. Croatia Airlines (member of Star Alliance) is major Croatian airlines company.



Source: www.en.wikipedia.org

In January 2011 the U.S. Federal Aviation Administration (FAA) assessed the Government of Croatia's Civil Aviation Authority announcing that Croatia complied with International Civil Aviation Organization (ICAO) aviation safety standards for oversight of Croatia's air carrier operations. This means that the country has IASA Category 1 rating and that Croatian air carriers are authorized to establish direct flights from Croatia to the US.

Croatia's nine commercial airports handled over seven million passengers last year, with Zagreb, Split and Dubrovnik accounting for over a half of all travellers. Zagreb Airport saw its busiest year on record, welcoming 2.587.798 passengers through its doors. The figure represents a growth of 6.5%. In addition, it registered 39.854 aircraft movements, up 3.9%, while 9.225 tons of cargo were handled, an increase of 4.1% on the year before.

Source: www.airport-suppliers.com/news/Airport_News_140/

General Statistics

Overall: 68 airports (2004 estimate)

Heliports: 3 (2008)

Airports with unpaved runways, (2004 estimated):

total: 45

5,000 to 7,999 ft (1,524 to 2,437 m): 1

3,000 to 4,999 ft (914 to 1,523 m): 7

under 3,000 ft (914 m): 37

Airports with paved runways (2004 estimated):

total: 23

10,000 ft (3,047 m) or more: 2

8,000 to 9,999 ft (2,438 to 3,047 m): 6

5,000 to 7,999 ft (1,524 to 2,437 m): 2

3,000 to 4,999 ft (914 to 1,523 m): 4

under 3,000 ft (914 m): 9

This year, 2016, number of passangers in July amounted to 1.48 million which is 19% more than in July last year according to Croatian Civil Aviation Agency. Split Airport noted the biggest increase (24.4% more than last year); Dubrovnik came second (16.5% more passangers) and Zagreb (10.6% of passangers more than last year).

Source: "Privredni Vjesnik", www.privredni.hr, 5th of September 2016.

Main Airports

Zagreb Airport



Source: www.zagreb-airport.hr

Zagreb Airport is the largest and busiest international airport in Croatia. Terminal 2, currently under construction of Zagreb airport was named after Franjo Tuđman, the former president of Croatia. It is also known as *Pleso Airport*.

The airport has been given to ZAIC consortium (Zagreb Airport International Company) in a 30-year concession under the terms of contract signed by the Government of Croatia and mentioned consortium. The contract includes financing, designing and construction of a new passenger terminal. ZAIC will operate the entire airport for 30 years, including the runways, the current passenger terminal during the entire construction period, the new terminal, the cargo terminal, car parks and future property developments. The concession contract involves a total investment of € 324m (£259m): € 236 million for the design and construction of the new terminal and € 88 million for operation of all airport infrastructures for the entire period of the concession.

The construction of a new 70,000 m² passenger terminal officially started on 18 December 2013. The terminal with capacity of 5.5 million passengers in the first phase should be completed by end of 2016 and 250,000 m² airport apron will also be added as part of the whole expansion project. The main terminal building itself is rather small measuring only 200 × 58 m or around 20,000 m². The apron or airport ramp measures 950 × 187 m and can accommodate around 15 medium and 2 wide body aircraft.

Accompanying the terminal will be a second parallel runway. The rail line alongside the Eastern bypass of Velika Gorica, which extends from Zagreb across the Homeland Bridge, was completed by 2007. These elements created an entirely new east entrance into the city adding to the one via the D408 state road. The airport was built in such manner that more expansions can be conducted easily if needed.

Source: www.exyuaviation.com/2016/01/croatian-airports-post-record-numbers.html

Traffic at Zagreb Airport

| Year | Passengers | Passenger % Change | Aircraft Landings | Cargo (tonnes) |
|----------------------|------------|--------------------|-------------------|----------------|
| 2006 | 1,728,414 | 11.4▲ | 20,442 | 10,393 |
| 2007 | 1,992,455 | 15.2▲ | 21,625 | 12,564 |
| 2008 | 2,192,453 | 10.0▲ | 22,271 | 12,697 |
| 2009 | 2,062,242 | 5.9▼ | 20,342 | 10,065 |
| 2010 | 2,071,561 | 0.5▲ | 19,906 | 8,156 |
| 2011 | 2,319,098 | 11.9▲ | 21,180 | 8,012 |
| 2012 | 2,342,309 | 1.0▲ | 19,527 | 8,133 |
| 2013 | 2,300,231 | 1.8▼ | 18,437 | 7,699 |
| 2014 | 2,430,971 | 5.6▲ | 19,174 | 8,855 |
| 2015 | 2,587,798 | 6.4▲ | 19,927 | 9,225 |
| 2016 (until 31 July) | 1,533,107 | 6.6▲ | 11,700 | |

Source: en.wikipedia.org/wiki/Zagreb_Airport

News and Developments

In 2017, expansion of the fleet is planned.

Source: www.exyuaviation.com/2016/05/croatia-airlines-to-expand-fleet-in-2017.html

Split Airport



Split Kastela/Resnik Airport (Airport Split) (IATA: SPU, ICAO: LDSP) is the airport serving Split and Kaštela in Split-Dalmatia County

Source: www.split-airport.hr

The airport is the second largest in Croatia in terms of passenger numbers, handling 1,955,400 passengers in 2015. It is an important hub for Croatia Airlines offering flights to many European cities such as London, Amsterdam, Frankfurt, Rome and Paris.

| Traffic at Split Resnik Airport | | |
|--|------------|-------|
| Year | Passengers | Cargo |
| 2005 | 934,049 | 877 |
| 2006 | 1,095,852 | 1,459 |
| 2007 | 1,190,551 | 1,482 |
| 2008 | 1,203,778 | 1,081 |
| 2009 | 1,115,099 | |
| 2010 | 1,219,741 | |
| 2011 | 1,300,381 | |
| 2012 | 1,425,749 | 649 |
| 2013 | 1,581,734 | 462 |
| 2014 | 1,752,657 | 429 |
| 2015 | 1,955,400 | |

Source: en.wikipedia.org/wiki/Split_Airport

In September 2011, the new airport ramp was opened. The cost of this investment was € 13 million, and it includes 34,000m² of new parking space for the airplanes, as well as a large support space on the lower level. This level is actually a ground level, and the airplanes are parked on the roof of the structure. Starting in 2009 and running through 2014, the major overhaul work was conducted and resulted in an expanded terminal with 4 jetways and with new apron.

News and Developments

The Croatian government has announced the construction of a new multi million euro terminal at Split Airport, which will stretch over 34.500 m² and increase the airport's capacity to 3.5 million passengers per year. Furthermore, the car park and bus area will be expanded by 35.500 m². Work on the € 59.3 million euro expansion project is expected to begin in autumn or early winter. It is estimated to take just over two years to complete. The new terminal will improve the quality of passenger services and will enforce European Union standards for international border crossings in line with the Schengen Agreement.

Source: www.exyuaviation.com/2015/06/split-airport-to-get-new-terminal.html

Osijek Airport



Source: www.osijek-airport.hr

Osijek Airport (IATA: OSI, ICAO: LDOS) is the airport serving Osijek. The airport is located 20 km East-Southeast of Osijek and is situated near the Osijek - Vukovar regional road.

In 2016, an 30% increase in number of passangers compared to 2015 was noted. Therefore, Osijek Airport is planning to increase number of lines to other Croatian airports and wishes to focus on introducing flights to destinations abroad. In 2015, a contract for the building of an aviohangar was signed:

Source: "Privredni Vjesnik", www.privredni.hr, 5th of September 2016.

Rijeka Airport



Source: www.rijeka-airport.hr

Rijeka Airport (IATA: RJK, ICAO: LDRI) is the airport serving Rijeka.

Most of the traffic to and from the airport occurs during the summer months, when it is used by several European low-cost airlines flying tourists to the northern parts of the Croatian coast.

Traffic figures at Rijeka Airport

| Year | Passengers | Change | Aircraft movements | Change |
|------|------------|----------|--------------------|----------|
| 2003 | 41,498 | | 2,630 | |
| 2004 | 51,349 | 23,74% | 2,753 | 4,68% |
| 2005 | 118,244 | 130,28% | 3,043 | 10,53% |
| 2006 | 166,675 | 40,96% | 3,497 | 14,92% |
| 2007 | 160,862 | 3,49% | 3,407 | 2,57% |
| 2008 | 109,706 | 31,80% | 2,521 | 26,00% |
| 2009 | 110,208 | ▲ 0,46% | 2,759 | ▲ 9,44% |
| 2010 | 61,478 | ▼ 44,22% | 2,016 | ▼ 26,93% |
| 2011 | 78,890 | ▲ 28,32% | 2,680 | ▲ 32,84% |

Source: www.en.wikipedia.org/wiki/Rijeka_Airport

Zadar Airport



Source: www.zadar-airport.hr

Zadar Airport (IATA: ZAD, ICAO: LDZD) is the airport serving Zadar. It is located in Zemunik Donji, 8 km from the Zadar railway station. The airport serves as the flying base for Lufthansa's flight school InterCockpit and is the Croatian Air Force main training base. Zadar airport is one of the few airports in the world where the runway intercepts a traffic road.

Airport Zadar experiences steady growth. In July 2016, 15.1% passengers more were recorded in comparison to July 2015. 25 operators of which Ryanair is the most important with 13 lines and totals 60% of traffic, currently serve the airport.

Source: "Privredni Vjesnik", www.privredni.hr; 5th of September 2016.

Dubrovnik Airport



Source: www.airport-dubrovnik.hr

Dubrovnik Airport (IATA: DBV, ICAO: LDDU), also referred to as Cilipi Airport, is the international airport of Dubrovnik.

The airport is located at approximately 15.5 km from Dubrovnik city centre, near the suburb of Cilipi. The airport is the third largest in Croatia in terms of passenger numbers and disposes of the longest runway.

At the time Airport Dubrovnik is undergoing modernization as 65% of all visitors come by plane, making it very important to local tourism. The investment amounts to HRK1.1 billion with EU co-financing HRK950 million, the project is expected to be finished by 2019.

Source: "Privredni Vjesnik", www.privredni.hr; 5th of September 2016.

Pula Airport



Source: www.airport-pula.hr

Pula Airport (IATA: PUY, ICAO: LDPL) is the airport serving Pula and is located 6 km from the city centre. Thanks to favorable climatic and technical conditions Pula is designated as the alternative airport for parts of Slovenia, Italy and even Austria.

Pula has a special interest in jet set passengers flying privately or rented aircraft, visiting the

Brijuni islands or attending concerts and shows at Pula Arena and sailing their yachts. Presently, Pula airport is capable of handling large aircraft such as Boeing 747 and Ilyushin Il-86.

Brač Airport



Source: <http://airport-brac.hr>

Bol Airport or Brač Airport (IATA: BWK, ICAO: LDSB) is an airport on the Croatian island of Brač, close to the town of Bol. It is primarily served by charter traffic from Europe during the summer seasons. Operators during the summer months are Croatia Airlines, Austrian Airlines and Private Wings Flugcharter. Most of the traffic occurs between Brač and Austrian cities.

Airport Mali Lošinj

Lošinj Airport (IATA: LSZ, ICAO: LDLO) is an airport 5.9 km from Mali Lošinj on the island of Lošinj. It is registered for domestic and international traffic. The runway is 900 m long and 30 m wide, and is equipped with 1C signalization according to the ICAO. A non-precision instrument approach using an NDB located near the city is published. The traffic consists primarily of small aircraft. As of 1 September 2016, European Coastal Airlines serves the airport and connects it between once and twice daily with Pula (downtown-seaport) and Split (downtown-seaport).

Source: www.airportmalilosinj.hr

A great expansion is being planned; which includes the extension of the runway from 900m to 1800m and the construction of a new airport building which will allow landing of up to 180 passenger capacity planes and making charter lines available to the island. According to current estimates the total value of investment will amount to € 35 million.

Source: "Privredni Vjesnik", www.privredni.hr: 5th of September 2016.

Croatian Airlines Companies

Croatia currently has three domestic air transport companies: Croatia Airlines (passenger transport, Franjo Tudman Airport Zagreb), Trade Air (charter, cargo transport, dangerous cargo transport licensed, Franjo Tudman Airport Zagreb) and European Coastal Airlines (hydroplanes, Split).

Croatia Airlines d.d.



Source: www.croatiaairlines.com

Croatia Airlines Ltd. is the state-owned flag carrier of Croatia. It is headquartered in Buzin near Zagreb and operates domestic and international services mainly to European destinations. Its main hub is Franjo Tuđman Airport with focus cities being Dubrovnik, Split, and Zadar. Since November 2004, the airline has been a member of Star Alliance.

Trade Air d.o.o.



Source: www.trade-air.com

Trade Air d.o.o. is a passenger and cargo charter airline based in Zagreb, Croatia. The company is registered as an airline whose main activities are passenger charter flights and cargo operations, organized either on charter chain flights or *ad hoc* flights. Trade Air also specialises in the transportation of dangerous goods.

European Coastal Airlines Ltd.



Source: www.ec-air.eu

European Coastal Airlines is a Croatian seaplane operator headquartered in Split. Founded in 2000, the company launched scheduled services in August 2014 and serves domestic flights within Croatia as well as services to nearby Italy. First of trans-Adriatic routes between Croatia and Italy began in November 2015 with four weekly flights between Split downtown and Ancona and also, between Rijeka Airport and Ancona.

Related Links

Croatian Ministry of Maritime Affairs, Transport and Infrastructure

Website: www.mppi.hr

Croatian Civil Aviation Agency: www.ccaa.hr

Croatian Airports:

- ZAGREB: www.zagreb-airport.hr
- SPLIT: www.split-airport.hr
- DUBROVNIK: www.airport-dubrovnik.hr
- ZADAR: www.zadar-airport.hr
- BRAČ: www.airport-brac.hr
- OSIJEK: www.osijek-airport.hr
- PULA: www.airport-pula.hr
- RIJEKA: www.rijeka-airport.hr

Aviation News Portal for Croatia and Ex-Yugoslavia Countries: www.exyuaviation.com

Croatian Airlines Companies:

- CROATIA AIRLINES: www.croatiaairlines.com
- TRADE AIR: www.trade-air.com
- EUROPEAN COASTAL AIRLINES: www.ec-air.eu

RAIL TRANSPORT IN CROATIA

The railways are being modernized because since the disintegration of Yugoslavia there has been hardly any investment in railway infrastructure. Many important routes are not electrified and allow only single track traffic around 'bends'. Major improvements are being underway especially on routes that can be best economically exploited for cargo transport. A result of this has been an increase in the maximum speed on the railway line on the Pan-European Corridor X, from the Slovenian border via Zagreb, Novska and Vinkovci to the Serbian border. In places the line's speed limit has been raised from 80 km/h to 120 km/h, and plans have been made to raise this further to 160 km/h on certain sections.



The railway line of the Pan-European Corridor Vb, from the Hungarian border via Koprivnica, Zagreb and Karlovac to the seaport of Rijeka had a slow section through Gorski Kotar, which underwent a major overhaul in 2014.

The railway line of the Pan-European Corridor Vc, from the Hungarian border via Beli Manastir, Osijek, Đakovo or Vinkovci, Slavonski Šamac, to the Bosnian border, is

also being modernised, the aim is to allow speeds of up to 160 km/h along the entire length.

MAJOR RAILWAY ROUTES IN THE COUNTRY:

- from Zagreb to Vinkovci
- from Zagreb to Osijek via Koprivnica
- from Zagreb to Rijeka
- from Zagreb to Split

RAIL LINKS WITH ADJACENT COUNTRIES:

1. Slovenia
2. Hungary
3. Serbia
4. Bosnia and Herzegovina

Railway length

TOTAL: 2,974 km

248 km is double track

1,228 km is electrified (41.3%)

The official rail speed record in Croatia is 181 km/h. This is just below the official 200 km/h high speed rail definition. This speed is never reached in regular service.

Croatia does have a locomotive class capable of this speed, and during the Yugoslav era there were plans for 'high speed' rail. The increasingly elderly high-speed rolling stock has had its speed limited to 120 km/h for safety reasons.

Recently Croatian Railways introduced a series of modern tilting trains produced by the German branch of Bombardier Transportation. They are usually deployed on the mountainous route between the two largest Croatian cities, Zagreb and Split, although they can sometimes be found on Inter City routes in the continental part of the country. The trains on the Zagreb-Split route offer passengers a more comfortable and quicker journey. The previous service used to take 9 hours, whereas the tilting trains take no more than 5.5 hours. There are plans to expand the tilting train service since it turned out to be very profitable on longer routes.

Croatian Railways aims to revitalize rail traffic through further improvements, thus establishing rail as serious competitor to the car, particularly during the busy summer months.

Croatian Railways' plan to build their first high-speed railway service is progressing. The journey from Zagreb to Rijeka will be cut to one hour compared to 4 hours with the existing track. The line is intended to carry the increasing amount of goods that enter Europe, at the Croatian port of Rijeka and are then transported to destinations across central and eastern Europe. The plans foresaw foreseen 2008-2010 as completion date. Due to the world economic crisis, the building start date is prolonged to a yet undefined date. The project plans have been drawn, however.

Pan-European Corridor X is going to be upgraded to higher speed sometime in the future. Possibly by building a new high capacity connection line from Sisak via Kutina to Lipovljani. The line should allow for speeds of up to 250 km/h.

Functioning of the entire Croatian railway system is based on three companies:

**HŽ PUTNIČKI PRIJEVOZ
d.o.o.**
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HŽ CARGO d.o.o.
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Liability Company
for Cargo
Transport*
www.hzcargo.hr

HŽ INFRASTRUKTURA d.o.o.
*HŽ Infrastructure Limited Liability
Company for Management,
Maintenance and Building of
Railway Infrastructure*
www.hzinfra.hr

Major Rail Routes

1. Dobova-Tovarnik line (International corridor X)

The railway line between Dobova and Tovarnik, operating the length of Croatia East-West via Zagreb, is the country's most important rail line, and part of the Pan-European corridor X.

It is also the most advanced and busiest, being completely electrified and consisting mostly of double tracks. In a longitudinal manner it crosses Croatia's Northern regions Slavonia, Posavina and the Greater Zagreb Region, connecting the most economically developed towns in Croatia with each other.

The route is as follows:

- Dobova (Croatian border with Slovenia)
- Zagreb
- Sesvete (track split towards Sisak - electrified)
- Dugo Selo (track split towards Botovo - electrified)
- Ivanić Grad, Kutina
- Village Banova Jaruga (again track split towards Virovitica (non-electrified))
- Novska (track split backwards towards Sisak (electrified))
- Nova Gradiška
- Combined villages Nova Kapela-Batrina (track split towards Požega, and via Pleternica towards Našice (non-electrified))
- Slavonski Brod
- Combined villages Strizivojna-Vrpolje (two track splits: towards Osijek (currently non-electrified) and towards Slavonski Šamac (electrified, Croatian border to Bosnia and Herzegovina))
- Vinkovci (four track splits: towards Osijek, Vukovar, Županja and Brčko in Bosnia and Herzegovina, before the Croatian war of Independence, this was one of the biggest East European junction stations, for both passengers and freight)
- Tovarnik (Croatian border with Serbia)

At Vinkovci the track splits and branches towards Županja, Vukovar, both non-electrified. The connection towards Osijek was severely damaged in the Croatian War of Independence. Repairs began in 2003 and by December 2008 the line was reopened.

2. Ogulin-Knin line

The Ogulin-Knin line, also known as the "Lička pruga" or Lika line, is part of the railway connection between Zagreb and Split. As of 2007, this line is being heavily upgraded with many sharp bends and grades removed in order to allow tilting trains to travel at nearly full speed on most parts of the track. This track was not intended as the shortest distance between Zagreb and Split. The line via Martin Brod which forms the border with Bosnia has not been reopened to passenger traffic since the conflict.

The problems faced are that, as the line was constructed a long time ago and contained many curves (often in difficult terrain), services were slow and speed severely restricted. The modernization has involved rebuilding complete sections of track, straightening many curves, by repositioning and by renewing track and enabling for higher speeds. Electrification of the line is not scheduled for the near future.

3. International corridor V

International corridor V has two branches in Croatia, the "b" and "c" branch. Corridor Vb enters Croatia in Botovo, and runs to Zagreb. The part from Zagreb to Rijeka should become part of this corridor, as soon as the extension towards Rijeka is built.

Corridor Vc is a Pan-European railway line, running north to south within Croatia. It enters Croatia at Beli Manastir, on the border with Hungary, and runs through Osijek to enter Bosnia and Herzegovina in Slavonski Šamac. It enters Croatia again in Metković, in the very south-east of Dalmatia, where it ends at the Ploče harbour. The line crosses the Dobova-Tovarnik line in Strizivojna-Vrpolje. The line is currently being heavily modernized in order to revitalize Ploče harbour.

The part from Strizivojna-Vrpolje towards Slavonski Šamac is fully electrified, and recently the modernized catenaries have been put into operation. The passenger traffic scheduled from Vinkovci to Slavonski Šamac (now performed by electrical power) is still fragmented. The remaining part from Strizivojna-Vrpolje to the region of Osijek (heart of the region Slavonia) is scheduled to be electrified, as soon as the general overhaul of the line track is completed, after which operating speed will finally be raised to 160 km/h (100 mph). The line will stay single track.

4. The Vinkovci-Osijek line

The Vinkovci-Osijek line was, before the dissolution of Yugoslavia, one of the most heavily used branch lines of Croatia, linking two regional centers. The line allowed speeds of up to 120 km/h. After the war, only about 10 km of the 35 km line remains preserved. Most of the track was removed by the Serbian forces, which used it as barricades and for other war purposes. The reconstruction of this vital route was finally finished in 2008. Test driving with a measuring vehicle has been

successful, and speeds of 60–80 km/h have been reached. A test train went on maiden voyage in 2008. The regular revenue service was restarted in the same year.

5. The "Unska pruga" route

The route called Unska pruga (literally the Una track) that connects Zagreb and Split along the Una river valley was once an integral part of the Yugoslav Railways system. Today, this route remains largely unused, since much of it virtually runs over the border between Croatia and Bosnia-Herzegovina, crossing it multiple times, on the section between Knin and Bihać.

Although this route is largely well preserved and electrified at 25 kV/50 Hz (making it compatible with the Croatian electrification system), administrative problems concerning the many border crossings cause this route to be used only for limited freight traffic services. The designated border crossing along the line between the two countries is at the town of Martin Brod.

Network connection problems

There are some rail network connection problems, which have historical causes. When Croatia was part of Yugoslavia, the rail network was consistently connected and managed by Yugoslav Railways. As the Yugoslav constituent states demerged, important rail links were severed. Istria has no direct connection through Croatia. Currently, the whole rail transport operates through Slovenia, though this could be solved with a tunnel north of Rijeka. The Dubrovnik broader area is again a special case. Dubrovnik and its surrounds are an exclave, divided by the small Bosnian Neum sea district. There is no direct rail link through Croatia toward Dubrovnik. If needed, rail traffic must be rerouted via Bosnia-Herzegovina (there was previously a narrow-gauge rail line operating from Mostar). Croatian Railways operates a short line between the port town of Ploče and the border town of Metković which sees both daily freight and passenger traffic. Historically, the region has been developed through sea travel.

Power Systems

The original decision in former Yugoslavia was to use 3 kV DC electrification for the railway network. This was performed on the Rijeka-Zagreb line, which due to the mountainous Gorski Kotar region had a need for more powerful trains than the traditional diesel powered ones.

Starting with the modernisation of the Zagreb-Belgrade line an electrification system of 25kV/50Hz was used. Electrification on other lines in Croatia was then made exclusively 25kV/50Hz. Later, the majority of the Zagreb-Rijeka line was re-electrified to 25kV/50Hz, but there is still a part that is 3 kV DC. Consequentially a power system break still exists at Moravice. All railway power systems in Croatia are exclusively of the overhead catenaries type.

New Developments in Croatian Rail Sector

In the transport sector, Croatia's accession to the EU has determined the authorities to reform and rethink the transport system, with special focus on railway transport, and in order to benefit from the future financial support of the EU, they have to provide the right administrative capacity to manage funds and elaborate viable projects. Thus, Croatia is eligible for structural and cohesion funds and EU approved investment plans for the cohesion policy worth € 449.4 million.

Since the end of the war for independence and through the transition period railways were in bad and underdeveloped state. Over the last ten years many sections of railways were under repair in

order to make them safer and their traffic capacity and speed limit higher.

Moreover, starting in 2011, Croatian Railways and the owners of old industrial lines have launched a new plan for revitalizing old industrial lines for transport of goods and proposed building new industrial lines to be integrated into the distribution chains of Croatian companies. For instance Jamnica d.d. in Jastrebarsko plans to build 300m of railway to connect warehouses with public railroads.

HŽ Infrastruktura is carrying out projects with investments promoted by the government and local authorities aimed to encourage cross-border railway traffic. For example, the development of a railway connection between the port of Rijeka and the Hungarian border is being carried out at the time with help of cohesion funds. Another project was the rehabilitation of the line Vinkovci-Serbian border, part of Corridor X, for which the European Investment Bank allocates € 31 million out of the total cost of the project worth € 65 Million. The double line is 33-km long and will enable local and international transport operations.

Source: www.promet-eufondovi.hr

Modernization of the Croatian Rail Sector

As well with all these investments, currently the first railway line in Croatia to be equipped with European Rail Traffic Management System (ERTMS) / European Train Control System (ETCS) technology has started operations in the central European state.

In 2012, commercial services started on the 33.5 km section of the Pan European Corridor X from Vinkovci to Tovarnik, following installation of an INTERFLO 250 ERTMS/ETCS system by Bombardier Rail Control Solutions.

INTERFLO 250 is an ERTMS/ETCS Level 1 solution for main lines (SIL4). This solution comprises all the trackside products required for the route and also includes the Automatic Train Protection (ATP) as well as the ATP system onboard the train. It is commonly applied as an overlay to existing national ATP networks providing higher levels of safety, but providing an economical migration and early experience with ERTMS Level 1 technology.

Increased line speeds

The introduction of the new technology on the Vinkovci to Tovarnik section enables trains to operate at speeds of up to 160 km/h, from a previous maximum line speed of 120 km/h.

The route upgrade forms part of an extensive programme of network modernisation being undertaken by Croatian Railways (HZ). In addition to suffering from lack of investment over a significant period during the 1990s, coinciding with the outbreak of war in the former state of Yugoslavia, damage caused as a result of the conflicts also took an expressly punitive toll on the rail network.

Pan European Corridor X was the tenth corridor added to a number of major routes – comprising road, rail and waterways – which, whilst requiring investment, had been identified as being strategically important to the transport infrastructure in Central and Eastern Europe.

The initial 9 routes had been identified in a sequence of Pan European Transport conferences held in Prague in 1991 and in Crete in 1994. A third conference, held in Helsinki, proposed a new Corridor X to link Salzburg in Austria with Thessaloniki in Greece passing through Austria, Slovenia, Croatia, Serbia, Macedonia and Greece and with one of four branches routing to Istanbul in Turkey.

Once the full corridor has been implemented the trade benefits could be significant for Croatia, facilitating considerably shorter journey times for freight transport on the East-West corridor and encouraging a modal shift in favor of rail.

The upgrade of this rail route using the latest ETCS technology from Bombardier will have the benefits of creating an interoperable corridor section that will both contribute to the development of the national network in Croatia and enhance transport links with the rest of Europe.

Within Croatia, the rail corridor from Vinkovci in the east of the country to Zagreb in the west covers approximately 300 km.

Croatian Railways and its infrastructure arm HZ Infrastruktura d.o.o. placed the contract in 2008 for the upgrade of the 33km section to Tovarnik with a consortium comprising Bombardier and SITE S.p.A with SITE responsible for the installation, power supply and telecommunications. The double track route incorporates 3 existing stations and 9 level crossings.

ERTMS Installation

Being the first ERTMS Level 1 project in Croatia, the project presented complex challenges on various levels as Domenico Fraioli, Project Manager for Bombardier Transportation Rail Control Solutions explains:

“This was the first electronic signalling system in Croatia and hence the new technology was unfamiliar to the client. The complexity of the project was compounded by the fact that we needed to design a system that could interface between the old level crossings and the new electronic systems. For cost reasons, the customer was keen to retain and modernise the existing crossings rather than introduce completely new equipment”.

The project has ensured the introduction of the latest generation EBI Lock 950 computer-based interlocking (CBI) system and wayside equipment, and certification of the system for operation in Croatia. This milestone follows the successful delivery of EBI Gate level crossing systems for the same line.

Bombardier installed 3 new EBI Gate 2000 level crossings (one for each station), developing a special interface for the old open line level crossings (EBI Gate 1100) and the EBI Lock. This enabled the existing level crossings to be interoperable with the new generation of signalling.

Interlocking systems

EBI Lock 950 computer-based interlocking systems supervise and control wayside objects, including signals, point machines and level crossing protection equipment.

The interlocking system receives route commands from traffic control centres, or local control systems and sends indications or status reports back. The interlocking system checks that conditions for the commands are fulfilled, locks routes and releases them after the train passes. EBI Lock 950 systems comprise an interlocking computer, an on-line back up computer and centrally located or distributed object controllers. Object controllers provide the interface to the wayside units and are located with the interlocking computers in racks or cabinets holding printed circuit boards, power suppliers, connectors and cables.

A Bombardier TRAXX F140 MS (multisystem) locomotive, owned by CB Rail, was leased to be used as the onboard unit for the wayside tests. Whilst configured for Germany-Austria-Belgium-Netherlands routes, the locomotive has been used in several countries for testing purposes.

ERTMS solutions

Since the inception of ERTMS, Bombardier, working closely together with UNIFE, has been a leader in the development of the specifications governing the system design and operational characteristics of the ERTMS standards particularly in areas such as balise transmission technology.

Its ERTMS product strategy is based on offering a solution with low life cycle costs to customers. Solutions can be individually tailored to customers' needs, encompassing integrated control rooms, computer-based interlocking systems, onboard equipment, point machines, signals and level crossings, as well as onboard and wayside automatic train protection (ATP) equipment.

The company's advanced solutions are now operating or being delivered on more than 2,500 vehicles and 15,000 km of track in 16 countries, including the highest speed ERTMS-equipped lines in China.

In addition, Bombardier has delivered its ERTMS Level 2 solution for the Amsterdam-Utrecht line in the Netherlands, one of the busiest mainlines in Europe, as well as Sweden's first high speed ERTMS Level 2 line, the Botniabanan, and other lines in Korea, Taiwan and Spain.

As part of extensive framework agreements in Sweden and Norway, Bombardier is delivering further onboard and wayside technology for ERTMS roll-out, including the world's first Regional ERTMS application – the INTERFLO 550 solution on the Västerdalsbanan. Bombardier has also been awarded contracts for the first ERTMS systems in Algeria, Poland, Brazil and Hungary.

As this latest project has demonstrated, the widespread adoption of ERTMS is paving the way for exciting new rail corridors, contributing to a revitalisation of the rail network across Central Europe to the Balkan states and beyond.

EU Funds 2010 - 2016

2010-2011 - Croatia will benefit from EU funds estimated at € 65.75 Million through the Operational Programme for elaborating the technical documentation necessary on Corridor Vb. As for the entire railway network, Croatia has elaborated draft projects estimated at € 982 Million per year for modernization, rehabilitation and construction of new lines for the period 2012-2013. "Infrastructure projects will be co-financed by EU with € 350 Million per year. In fact, over the next 2 years, Croatia will implement projects totalling € 2 Billion. We want to attract transport volumes to rail, but in order to do this; we will first have to invest in infrastructure. Indeed, Croatia has invested in roads so far, but now is the right time for tracks to go first", concluded Ivan Matasic, during the WBSA "Railway Days" Summit.

2012 – 2013 bring € 2 Billion infrastructure projects

To increase goods volume, the "Bosphorus Europe Express 25h" project, on the Ljubljana– Zagreb–Belgrade–Sofia–Istanbul/Halkali route, is very important as it stimulates railway transport competitiveness compared to road and maritime modes, by increasing freight transport volumes. For Croatia, this project means increasing the quality level of services and safety standards and the operation of cars both by private and national operators. One of the great advantages of this project consists in accessing new markets by using smaller taxes and reducing travel time by 39% compared to road and maritime modes.

For rail infrastructure projects, Croatia benefits from European Union funds for Corridor X and Vb. Projects include rehabilitation and modernisation works on line Dugo Selo – Novska and

construction works on the second line Dugo Selo – Novska, both projects on Corridor X. For Corridor Vb, the construction of the second line is in plan (doubling the Zagreb – Rijeka line), doubling the Dugo Selo – Koprivnica line and construction of a link to Corridor VII (Danube with Croatian ports) by upgrading and electrifying the Vinkovci – Vukovar line.

2016 - Croatia will receive € 306 Million for 12 transport projects

The Ministry of Maritime Affairs, Transport and Infrastructure (MPPI) received a formal approval from the EU for € 306.9 million in EU co-financing, under the Connecting Europe Facility (CEF) for 12 approved transport projects. The lion's share of the funding (€ 241.3 million) is earmarked for the Krizevci-Koprivnica- Hungarian Border railway project. The second largest project is the upgrade of the Rijeka Port infrastructure (i.e. the Zagreb pier container terminal, for which € 26.8 million in CEF financing is earmarked). The EC also approved funding for the construction of the Svilaj Bridge on the Sava River project.

Related Links

Croatian Ministry of Maritime Affairs, Transport and Infrastructure: www.mppi.hr

EU Funds and Ministry of Maritime Affairs, Transport and Infrastructure: www.promet-eufondovi.hr

EU Funds News and Developments; Croatia-Bruxelles relations: www.vlahovicgroup.com

Croatian Railway System Companies:

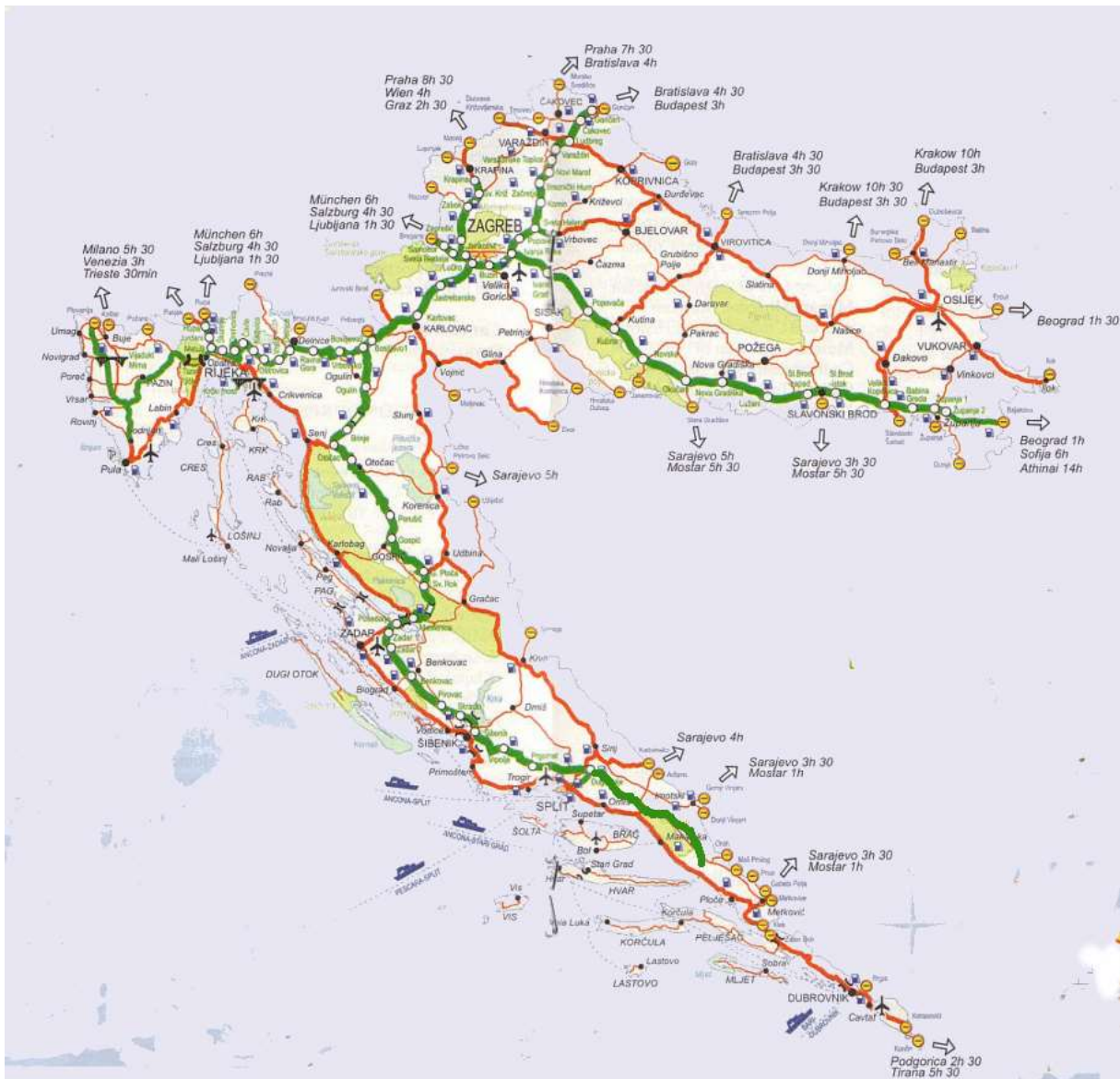
- HŽ Putnički Prijevoz (HŽPP): www.hzpp.hr
- HŽ Cargo: www.hzcargo.hr
- HŽ Infrastruktura: www.hzinfra.hr

Croatian Railway News Portals:

- www.zeljeznice.net
- www.vlakovi.hr

ROAD TRANSPORT IN CROATIA

The road transport in Croatia has significantly improved, topping most European countries. Croatian highways are widely regarded as being one of the most modern and safest in Europe. This is also due to the fact that the largest part of the Croatian motorway and expressway system has been recently constructed, and further construction is continuing.



A major reason for the motorway construction "mania" of the 2000s is that in the last 20 years of Yugoslav Communist rule, during which Croatia formed part of the former Yugoslavia, no major projects had been realized. When Croatia declared independence in 1991, the only true motorways in the country were Zagreb-Karlovac (A1) and Zagreb-Slavonski Brod (A3), the latter being part of the highway "Bratstvo i jedinstvo". This highway was later extended, and today it connects Zagreb to the Croatian borders with both Serbia (near Lipovac) and Slovenia (near Bregana).

The dream to connect the two largest Croatian cities Zagreb and Split with a motorway (autocesta) went back to the times of the Croatian Spring. However, the construction of this project has always been blocked by the ruling Communist Party. Recently, after so many years of waiting, this long awaited dream has been realized, and now the Zagreb-Split motorway is a reality. There is also a

motorway from Zagreb to Rijeka, a motorway from Zagreb to the Northeast (Hungarian border), as well as a motorway from Zagreb to the northwest (Slovenian border).

From 2007, the construction of eleven different motorways was planned of which two: A3 (Bregana-Zagreb-Slavonski Brod-Serbian border) and A2 (Zagreb-Krapina-Macelj) are completed, one (A4: Zagreb-Varaždin-Hungarian border) was integrated into European route E71, three A6 (Zagreb-Rijeka) B8 and B9 (Istrian Y) are completed.

Tourism is of major importance for the Croatian economy, and most tourists come on vacation in Croatia in their own cars. Without adequate roads, the traffic would get rather jammed during the summer months. For this reason, and as a means for stimulating urgently needed economic growth, highways have become indispensable for the sustainable development of this country. Croatia already has a considerable highway density for a country that still has to cope with the consequences of communism and the recent war. As of 2006, Croatia has 28,344 kilometers of roads. Out of these, there are 23,979 km of paved and 4,365 km of unpaved roadways.

The road network of the Republic of Croatia is being managed by:

| | | |
|---|--|---|
| Hrvatske autoceste d.o.o. <i>Company for operation, construction, and maintenance of motorways.</i> www.hac.hr | Hrvatske ceste d.o.o. <i>Company for operation, construction and maintenance of State roads.</i> www.hrvatske-ceste.hr | Concession societies <i>Societies for the construction, maintenance and operation of motorways and objects for toll collection.</i> |
|---|--|---|

Motorways and Expressways

In Croatia, the term *autocesta* (*motorway* or just *highway*) describes a divided road with two lanes in each direction and a shoulder on the right side reserved for vehicle breakdowns. The road signs for *autocesta* are green with white inscriptions similar to the Swiss Autobahn.


The term *brza cesta* or *expressway* refers to a road with two lanes in each direction, without a shoulder for emergencies. *Polu-autocesta* or semi-highway refers to a two-lane, undivided road running on one roadway of a motorway while the other is in construction. The designations of motorways are "A" and the motorway's number. The expressways are designated "B" with a number. The "E" numbers are designations of European routes.

List of completed motorways





| Motorway | County | Length | Description | Notes |
|---|--|----------|---|------------------------------|
|  | Zagreb, Karlovac, Lika-Senj, Zadar, Šibenik-Knin, Split-Dalmatia, Dubrovnik-Neretva and the City of Zagreb | 480.7 km | The A1 starts in Lučko interchange, a part of Zagreb bypass where the A3 motorway junction is found. The motorway proceeds south from Zagreb to Karlovac and further on to Bosiljevo 2 interchange where the A6 motorway branches off towards Rijeka. The route continues south to Gospić, Zadar, Šibenik, Split. The southernmost sector of the motorway proceeds from Split to Ploče and Metković. | Additional sections planned. |
|  | Zagreb, Krapina-Zagorje and the City of Zagreb | 59.4 km | The A2 starts on the border of Slovenia near Macelj. The motorway passes west of Krapina and proceeds south towards Zagreb. The southernmost section of the motorway forms a part of Zagreb bypass and it terminates in Jankomir interchange with the A3 motorway. | 3.75 km as a semi-motorway. |
|  | Zagreb, Sisak-Moslavina, Brod-Posavina, Vukovar-Syrmia and the City of Zagreb | 306.5 km | The A3 starts on the border of Slovenia near Bregana. The motorway passes north of Samobor and proceeds west towards Zagreb, passing to the south of the city and forming a part of Zagreb bypass, where the route contains junctions with the A2, A1 and A4 motorways. It continues east to Kutina, Slavonski Brod, Sredanci interchange with the A5 motorway and further east to Županja and terminating on the border of Serbia near Lipovac | Entire route completed. |
|  | Međimurje, Varaždin and Zagreb and the City of Zagreb | 96.3 km | The A4 starts on the border of Hungary near Goričan. The motorway passes near Čakovec and Varaždin south towards Zagreb and the southernmost part of the route is a part of Zagreb bypass, where the motorway terminates in Ivanja Reka interchange, where the traffic defaults to the westbound A3 motorway. | Entire route completed. |
|  | Osijek-Baranja and Brod-Posavina | 53.2 km | The A5 starts near Osijek and proceeds south bypassing Đakovo to Zoljani interchange near the A3 motorway. | Additional sections planned. |


| | | | | |
|---|----------------------------------|----------|--|------------------------------|
|  | Primorje-Gorski Kotar | 78.6 km | The A6 starts in Bosiljevo 2 interchange, branching off from the A1 motorway and proceeds west bypassing Delnice to Rijeka and Orehovica interchange with the A7 motorway. | Entire route completed. |
|  | Primorje-Gorski Kotar | 44.7 km | The A7 starts at the border of Slovenia and heads south to Rijeka, passes the city as Rijeka bypass. The Rijeka bypass section comprises an interchange with the A6 motorway and proceeds east terminating near Šmrika where the traffic defaults to the D8 state road | Additional sections planned. |
|  | Istria and Primorje-Gorski Kotar | 64.0 km | The A8 spans between Kanfanar and Matulji, i.e. the A9 and A7 motorways. As of November 2011, the Kanfanar–Rogovići section is brought to the motorway standards, and the rest is a limited access two-lane route. | 45.9 km as a semi-motorway |
|  | Istria | 76.79 km | The A9 starts near Umag and the Slovenian border, meets the A8 expressway at Kanfanar interchange, and proceeds south to Pula, forming the western arm of Istrian Y. | 2 km as a semi-motorway. |
|  | Dubrovnik-Neretva | 3.9 km | The A10 starts at Metković interchange and runs to border crossing–Metković. | Entire route completed. |
|  | Zagreb and Sisak-Moslavina | 29.2 km | The A11 starts at Velika Gorica interchange and runs south to Lekenik interchange. It was connected to A3 in November 2015. It is finished to Lekenik. | Additional sections planned. |

Motorway section under construction

| Motorway | County | Length | Section | Description | Scheduled completion |
|---|----------------|--------|---------------------|--|-----------------------|
|  | Osijek-Baranja | 2.5 km | Drava Bridge | As of 2015, this subsection is in construction | Later than April 2017 |
| | | 3.8 km | Drava Bridge–Osijek | As of 2015, this subsection is in early construction stages. | |

Planned motorway sections

| Motorway | County | Length | Section | Notes |
|---|-------------------------------------|---------|---|---|
|  | Dubrovnik-Neretva | 39.7 km | Metković–Doli | As of 2015, no funds are allocated for this section. |
| | | 29.6 km | Doli–Osojnik (Dubrovnik) | Funding was planned for development of detailed designs for this section. As of 2015, no funds are allocated for this section. |
|  | Osijek-Baranja | 5.25 km | Branjin Vrh border crossing–Beli Manastir | The section is included in the applicable legislation, but as of 2015, no funds are allocated for this section. |
| | | 18.3 km | Beli Manastir–Drava Bridge | In 2015, this section was planned to enter construction stages, but the public tender process was aborted in May 2015. |
| | Brod-Posavina | 0.6 km | Sava Bridge | This is a border bridge near Svilaj between Croatia and Bosnia and Herzegovina. As of 2015, an international tender was still being organized. In March 2016, the tender process was completed. |
|  | Primorje-Gorski Kotar and Lika-Senj | 56 km | Križišće–Žuta Lokva | As of 2015, studies are being funded for the sections Križišće–Novi Vinodolski–Senj–Žuta Lokva. |
|  | Istria | 45.9 km | Rogovići–Matulji | An upgrade of the existing two lane expressway is planned along the A8 route on the sections Rogovići–Lupoglav (23.95 |

| | | | | |
|---|-----------------|--------|-----------------|---|
| | | | | km), Lupoglav–Vranja (4.16 km), Vranja – Učka Tunnel - Kvarner portal (8.01 km) and the Učka–Matulji Tunnel. |
|  | Sisak-Moslavina | 11 km | Lekenik–Sisak | As of 2015, the section is still in a pre-construction phase. |
| | | 6.2 km | Sisak–Mošćenica | As of 2015, this section continues to be mentioned in the overall plan but no investments are being made in it. |

Management

Hrvatske autoceste (HAC) or **Croatian Motorways Ltd** is a Croatian state-owned limited liability company tasked with management, construction and maintenance of motorways in Croatia pursuant to provisions of the Croatian Public Roads Act enacted by the Parliament of the Republic of Croatia. Tasks of the company are defined by Public Roads Act and its Founding Declaration, and the principal task of the company is management, construction and maintenance of the motorways. In practice, Hrvatske autoceste is responsible for management or development the following motorway sections:

| Number | Control cities |
|---|---|
|  | Bosiljevo (A6) - Split - Ploče |
|  | Bregana - Zagreb (A1, A2, A4, A11) - Slavonski Brod - Sredanci (A5) - Županja - Lipovac |
|  | Ivanja Reka (A3) - Varaždin - Goričan |
|  | Sredanci (A3) - Đakovo - Osijek |
|  | Jakuševac (A3) - Velika Gorica - Buševac |
|  | Sveta Helena (A4) - Vrbovec |

The company was established on April 6, 2001, under the law promulgated on on April 5, 2001, with the share capital of the company worth 131,140,100.00 Croatian kuna. Hrvatske autoceste is organized in six business sectors: Design and development, Construction, Maintenance, Toll collection, Transport, Financial and business operations and Legal, personnel and general sectors. All profits generated by Hrvatske autoceste are used for construction and maintenance of the roads the company manages.

Toll

A toll is charged on most motorways, the only notable exception being the Zagreb bypass. Payment

in kuna, all major credit cards and euro are accepted at all toll gates. There are two toll collection systems in Croatia: the open and the closed system. Open system is used on some bridges and tunnels and short stretches of tolled highway. In this system, there is only one toll plaza and drivers immediately pay the toll upon arriving. In the closed system, every driver passes through two toll plazas. As the driver enters the system, they are given a receipt on the first toll plaza. This receipt states the point of entry. The receipt is presented upon leaving the highway through the second toll plaza. It is needed to calculate the toll. If the driver loses the receipt, they are charged with the maximum possible toll. If the receipt is more than 24 hours old, the driver must present the toll attendant with a reasonable explanation. There are also reduced rates for transport companies, which should prevent heavy traffic along regional roads. Hrvatske Autoceste imposes additional fees for trucking companies that frequently use a route.

TOLL FEE CALCULATOR: www.hellotourist.net/info.php

Non-cash toll payment

Not counting cash and credit cards, there are several ways to pay toll on Croatian motorways:

- SMART card, a non-refundable and non-expiring prepaid toll card showed to the toll attendant. As of August 2007, a SMART card costs 20 kn. Additional toll may be prepaid at owner's will. The SMART card enacts a 10% discount on toll when used. It is not recommended to use the SMART card for paying less than 200 kuna in toll. 200 kuna equals to a round-trip in relation Zagreb - Zadar. The SMART card must be purchased by pre-paying at least 100 kuna of toll.
- Additional money can be added to the toll account at any time. The SMART card has recently been refitted to allow use by flashing the card in front of a magnetic card reader.
- Seasonal SMART card offers a significantly higher discount rate of 23.5% usable during specified five months. Unused amount upon expiry of these five months will be used with the standard 10% discount. As of August 2007, a class I vehicle seasonal SMART card costs 1200 kuna. The full amount is submitted to the toll account.
- Electronic toll collection (ETC) is a contactless toll collection method without mediation of a toll attendant in which the toll collection process is conducted by means of an ETC-device mounted on the windshield of the driver's car and the antenna in the toll lane. ETC-device can be used as electronic media for toll collection on the following motorways: Zagreb-Split-Ploče Motorway, Zagreb-Rijeka Motorway, Bregana-Zagreb-Lipovac Motorway, B.Manastir-Osijek- Svilaj Motorway, Zagreb-Varaždin-Goričan Motorway, Krk Bridge toll plaza and Rupa-Rijeka.
- At peak traffic volumes at toll plazas the company Hrvatske Autoceste d.o.o. reserves the right to convert the toll lanes ETC into combined toll lanes where toll can be paid using an ETC device, by credit cards, foreign and national currency as well as with SMART card which should increase the road speed at toll plazas.
- ENC has been criticized for incompatibility among motorway concessioners and often malfunctions.

Other motorways

All heavily traveled routes towards Slovenia, Hungary and Serbia are motorway connections, and almost all parts of Croatia are now easy to reach using motorways. Since June 2005 the Istrian Y extends from the Slovenian border in Istria and the A7 connects Slovenia to Rijeka. The A2 connection between Zagreb via Zagorje to Maribor was completed in May 2007.

Motorway A3 extends from Slovenia via the Zagreb bypass through the length of Slavonia to the Serbian border. In Slavonia there is now another motorway, A5, along the European route E73 (European north-south corridor Vc) between the Hungarian border at Beli Manastir, Osijek and the Bosnian border. This route will eventually continue as a modern motorway towards Sarajevo and further on to the Croatian sea port of Ploče.

The A4 connection from Zagreb to Varazdin and Čakovec exists since 2003, which was extended to the Hungarian border in October 2008 to complete the upgrade of the European route E71. The A6 route between Rijeka and Zagreb was constructed as an expressway in spring 2004, and upgraded to a full motorway in October 2008, thus upgrading the Croatian section of the European route E65. Together these two upgrades completed the European North-South corridor Vb. A motorway connection of Zagreb to the important industrial city of Sisak is planned to be constructed as A11.

Significant tunnel and bridge construction projects in Southern Dalmatia are finished, such as the Biokovo tunnel near Makarska, which now connect the panoramic seashore road with A1, and a 2,374 m (7,789 ft) long Pelješac bridge, connecting the Pelješac peninsula to the Croatian mainland.

By 2008, numerous service areas and petrol stations had been constructed along all Croatian motorways. All Croatian motorways are equipped with enclosed service areas with gas stations and parking. Many areas have restaurants and children's playgrounds.

Major Roads

Major roads that aren't part of the motorway system are državne ceste (state routes). They are marked with the letter D and the road's number.

The most traveled state routes in Croatia are:

- D1 connects Zagreb and Split via Lika - passes through Karlovac, Slunj, Plitvice, Korenica, Knin and Sinj.
- D2 connects Varazdin and Osijek via Podravina - passes through Koprivnica, Virovitica, Slatina and Našice.
- D8 connects Rijeka and Dubrovnik, widely known as Jadranska magistrala and part of E65 - runs along the coastline and connects many cities on the coast, including Crikvenica, Senj, Zadar, Sibenik, Trogir, Split, Omis, Makarska and Ploče. Since the construction of A1 motorway beyond Gorski kotar started, D1 and D8 are much less used.

These routes are monitored by Croatian roadside assistance because they connect important locations. Like all state routes outside major cities, they are only two-lane arterials and do not support heavy traffic. All state routes are routinely maintained by Croatian road authorities. The road sign for a state route has a blue background and the route's designation in white. State routes have one, two or three-digit numbers.

Minor Roads

Secondary routes are known as county roads. They are marked with signs with yellow background and road number. These road designations are rarely used, but usually marked on regional maps if these roads are shown. Formally, their designation is the letter Ž and the number. County roads have four-digit numbers. The least known are the so-called local roads. Their designations are never marked on maps or by roadside signs and as such are virtually unknown to public. Their designations consist of the letter L and a five-digit number.

Related Links

Croatian Ministry of Maritime Affairs, Transport and Infrastructure: www.mppi.hr

STATE-OWNED COMPANIES; MANAGEMENT OF CROATIAN ROADS:

- Croatian Motorways/Highways; Hrvatske Autoceste (HAC): www.hac.hr
- Croatian Motorways Maintenance and Tolling: www.hac-onc.hr
- Croatian Roads; Hrvatske Ceste: www.hrvatske-ceste.hr
- RIJEKA –ZAGREB Motorway: www.arz.hr

Croatian Association of Toll Motorways Concessionaires, Hrvatske Udruga Koncesionara za Autoceste s Naplatom Cestarine (HUKA): www.huka.hr

HAK (Hrvatski Autoklub); Croatia Traffic Info: www.hak.hr

BUS TRAFFIC



Source: www.zgh.hr

In contrast to the fairly underdeveloped rail traffic, buses represent the most-accepted, cheapest and widely-used means of public transport. National bus traffic is very well developed and it is very easy to reach even the remotest parts of Croatia by bus. Almost all buses on national routes are air-conditioned and offer pleasant traveling comfort. The Croatian parliament has passed a law that no bus should be older than 12 years - however, this decision is currently frozen because of the high cost for bus operators.

In practice, bus fares are collected on the bus while traveling, which is sometimes even cheaper than when paying at the ticket office (there is an additional fee for stored luggage) and sometimes a "ticket office fee".

BUS TERMINALS PORTAL:
www.autobusni-kolodvor.com

BUS TRANSPORT PORTALS:
www.getbybus.com/hr/autobus-hrvatska
www.busradar.hr
www.buscroatia.com

From Croatia, there are many international bus routes to the neighboring countries (Slovenia, Bosnia and Herzegovina, Serbia etc.), as well as to Austria, Germany, Slovenia, Switzerland and to other European countries. International buses correspond to European standards.

Zagreb has the largest and most modern bus terminal in Croatia. It is located near the downtown in Trnje district on the Marin Držić Avenue. It sports a specially designed waiting areas above the bus stopping and parking area. The Zagreb bus terminal is close to the central train station, and it is easy to reach by tram lines and by car. Croatian bus transport companies are usually small and medium-sized and serving one or two counties, only a small number offer transport nationwide.

Source: www.asecap.com/english/documents/HUKA.pdf ; www.mmpi.hr/ENG%20FINAL%20II.pdf

MARITIME TRANSPORT IN CROATIA

Croatia has several large seaports. The largest seaport with the deepest channel to a port in the Adriatic is Rijeka on the northern Croatian coast, followed by Ploče in southern Dalmatia. The port of Ploče is of strategic importance for the industries of Bosnia and Herzegovina. The largest Croatian passenger port is Split in Dalmatia, also called gateway to the islands, followed by Zadar. There are 66 inhabited islands along the Croatian coast which means there are a large number of local ferry connections.

Source: www.railwaypro.com

SEA PORTS AND HARBORS

MAJOR TRANSPORT SEAPORTS:

- Omisalj
- Ploče
- Rijeka
- Sibenik

OTHER SEAPORTS:

- Dubrovnik
- Dugi Rat
- Pula
- Split
- Zadar

MERCHANT MARINE (from 2010):

| | |
|--------------------|-----------------|
| TOTAL | 77 ships |
| BULK CARRIER | 24 |
| CARGO | 7 |
| CHEMICAL TANKER | 8 |
| PASSENGER/CARGO | 27 |
| PETROLEUM TANKER | 10 |
| REFRIGERATED CARGO | 1 |

INLAND WATERWAY PORTS

- VUKOVAR (Danube)
- SISAK (Sava)
- SLAVONSKI BROD (Sava)
- OSIJEK (Drava)

Ports

The Republic of Croatia counts six ports open for public traffic of outstanding (international) economic importance: Rijeka, Zadar, Sibenik, Split, Ploce and Dubrovnik. Total investment into projects regarding them amounts to € 499.5 million, financed from national budget, World Bank loans, European Investment Bank, European Bank for Reconstruction and Development, with government guarantees, while some of the new projects are co-financed from EU funds.

RIJEKA

Port of Rijeka is well sheltered harbour with good and safe outside anchorage, situated in the northern part of the Adriatic. Breakwaters are 1.754 m and 420 m. Port entrance is 270 m wide. The width of entrance to Susak Basin is 43 m. Depth at port of Rijeka entrance is about 40 m, in mid-harbour 20 to 28 m, at quays 6 to 10 m. Bay of Bakar, 4.700 m long, 700 m wide, average depth 26 m, at entrance 44 m. Entrance to Bay of Bakar is 400 m wide. Max tidal range is 1.2 m.

TERMINALS:

General cargo terminal (Basin Rijeka/Sušak)

- Sea depth – 5m-14m

Grain terminal (Basin Rijeka)

- Sea depth - max. 14m
- Silos capacity – 57,000t

Liquid cargo terminal (Omisaalj)

- Sea depth - 30m
- Storage capacity – 130,000t



Source: www.eldmarc.com

Container and Ro-Ro terminal (Brajdica)

- Sea depth – 11m-12m
- South shore - 300m - 2 STS container cranes; an additional 300m of the coast with the accompanying infrastructure and superstructure is under construction (predicted total capacity in future is 500,000 TEU)
- West shore - 164m - 2 STS container cranes

Grain terminal (Bakar-Podbok)

- Sea depth - 18m : Storage capacity - for 130,000t (coal) or 400,000t (ore)

Ro-Ro terminal Bakar (Goranin)

- Planned capacity approx. 50,000 cars per year. It will be an exclusive port for particular type of vehicles or a mixed terminal for various types of vehicles, depending on the market needs. Planned area includes 60,000m² of the former coke plant plateau. *Project is in preparation.*

Terminal Skrljevo

- Warehouse complex has the status of a free zone. The total area of 417,413m² with open storages (130,000m²) and closed warehouses (44,000m²) with free area (243,000 m²). The

terminal is connected to the railway infrastructure (6 tracks). In 2006, expansion project of the warehouses capacity has been completed, making available additional 140,000 m² of storage space.

Terminal Rasa – Brsica

- Sea depth - 8m: Storage capacity – 510,000m²

Passenger terminal

- Sea depth - 7.5m: Total length of the shore - 900m

Ongoing projects

The ongoing Rijeka Gateway Program is bringing multiple benefits to the port, the city, and more importantly the inhabitants of Rijeka and its surroundings. The Port is aiming to achieve the potential to develop into a major regional container port with sound financial performance generating over USD 20.7 million of annual revenue. The port activities could generate annually over USD 109 million of revenue for the various transport participants in Croatia. City life will be enhanced by providing the inhabitants and visitors with an improved access to the sea, while the delta and the Port of Baroš areas transform into lively urban areas in an attractive location. Finally, global experience in port city redevelopment points to opportunities for job creation in Rijeka and its surroundings in the first phase of the delta redevelopment. Currently, effort is made to connect it efficiently with the railroad network to make it a profitable transport route with Europe.

The Rijeka **Gateway Project** includes:

1. The reconstruction of the Viennese and Prague coast will create an important 4 hectares operating area.
2. The building of an infrastructural corridor - 2.5km long - will secure a quality traffic route along the Western part of the port. Reconstructed lines of all installations and reconstructed railroad tracks will be part of the corridor.
3. Besides the Zagreb coast, there are plans for the building of a new coast which will be 1.200m long. Although the first phase will include only the construction of a 300 meter coast line, the newly built coast area will cover a space of 10ha and it will be used for the transshipment of general cargo.
4. The passenger terminal is located at the root of the Rijeka mole. The final layout of the terminal will include two berths for passenger ships and a building for the reception of passengers.

Source: www.portauthority.hr/en/development_projects/rijeka_gateway_project
www.siteresources.worldbank.org/Ollivier-Rijeka-Gateway.pdf ; www.portauthority.hr

PLOCE

The Port of Ploce is located on the Adriatic Sea coast in the area of the Neretva river. Its facilities include terminals and other structures in Ploce and in Metkovic, which lies on the Neretva approximately 20 kilometres inland to the east of Ploce. The Port of Ploce is at the southern terminus of Pan-European transport corridor V, branch C, representing a maritime extension of the rail and road routes leading to and from the Ploce area. These routes include modern roads such as: the Croatian A1 motorway, accessed via the D425 and D513, of E65 and connecting Zagreb

Budapest and Vienna, the planned A10 motorways which are parts of European route E73. All the port's quays are linked by tracks connected to a single-track railway to Mostar, Sarajevo, Osijek and further north towards Budapest.

TERMINALS:

General Cargo Terminal

- Processing, packaging and storage facilities
- Six berths and a 9.2m draught

Bulk Cargo Terminal

- Storage facilities
- Three berths and 13m draught
- Capacity of 15,000t of cargo per day



Source: www.eldmarc.com

Liquid Cargo Terminal

- Handles fuel and other liquid cargo; it has 92,000m³ of storage capacity overall
- A single berth and a 12m draught. Its cargo storage and handling facilities are operated by Luka Ploce Trgovina d.o.o. and Naftni Terminali Federacije d.o.o. (owned by the Federation of Bosnia and Herzegovina).

Grain Cargo Terminal

- Handles transshipment, packaging and storage of cereals and oil seeds, with capacity of 400t per hour; it has a single berth, 45,000t of storage capacity and a 9.8m draught.

Wood Terminal

- Handles, stores and processes timber; it has a single berth and a 9.2-metre draught.

Alumina and Petroleum Coke Terminal

- It has a 9.2m draught; for alumina it has a storage capacity of 20,000t and a transshipment capacity of 600t per hour; for petroleum coke it has 10,000t of storage capacity and 260t per day handling capacity.

Container Terminal

- Handles intermodal containers; it has a roll-on/roll-off ramp and accommodates Panamax ships. Its annual capacity is 60,000 TEUs.

Bulk Cement Terminal

- Has 200t per hour handling capacity and 4,000t storage capacity; it is part of Business Unit Metkovic, located in Metkovic on the Neretva river, which is 5m deep at the site.

General Cargo Terminal (Metkovic)

- Adjacent to the Bulk Cement Terminal, forming a part of Business Unit Metkovic.

Slag Terminal

- 10,000t storage capacity adjacent to the Bulk Cement Terminal, forming a part of Business Unit Metkovic.

Passenger Terminal

- Two moorings: the primary mooring is used for international transport and accommodates vessels up to 120m LOA (length overall), with an 8m draught; the secondary mooring is used for local and international transport and accommodates vessels up to 65m LOA, with 5m draught.

The Port of Ploce is the second largest cargo seaport in Croatia, mostly serving Bosnia and Herzegovina, along with some local and regional users. The port is administered by the Port of Ploce Authority, with Luka Ploce d.d. as the primary concessionaire. Subcontractors that operate the liquid cargo terminal facilities are Naftni Terminali Federacije d.o.o. and Luka Ploce Trgovina d.o.o., while passenger and vehicle transit is handled by Jadrolinija. Jadrolinija ferries sail between Ploce and Trpanj on the Peljesac peninsula and the D415 state road.

Ongoing projects

The Port of Ploce is projecting a new terminal for liquid cargo including the building of a completely new terminal - 160.000m² large - with the capacity to warehouse 280.000m³ of oil and 35.000 m³ of liquified gas. The bulk cargo terminal was finished by 2015, while all the cargo handling machinery will be installed during 2017. Yearly capacity is 4.600.000t with possible increase of capacity to 6.200.000t. The terminal will include equipment for handling cargo, transport system, packaging and equipment return and an industrial railroad platform. The container terminal is planned to be elongated in the future for 330m and storage capacity increased by 25ha.

Source: www.ppa.hr/index.php/2015-04-17-08-54-45/projekt-itt.html ,
www.port-authority-ploce.hr/statistics.asp ; www.luka-ploce.hr

ZADAR

The Port of Zadar is directly linked to the Zagreb- Split highway and to central Croatia by two railways and consists of:

Passenger Port

- island, coastal, international ferry, ro-ro traffic

Cargo Port Gazenica

- liquid, bulk, general cargo

New Passenger Port Gazenica:

- island, coastal, international, ferry,
- passenger traffic, mega cruisers
- ro-ro traffic



Source: www.eldmarc.com

TERMINALS:

Terminal for liquid cargo

- 60 m coastline (mooring up to 190m), draft 10.3m - 12m, mooring of ships up to 40,000 DWT.
- Tanks for petroleum products with capacity of 60,000m³, tanks for chemicals with capacity of 15,000m³, 16 pipelines, floating protective barrier of 300m.
- Cargo: diesel, gasoline, VCM.

The terminal for the supply of oil platforms

- 180m coastline, the draft from 4.8m - 7.1m, 9m long ramp, an open storage area of 20,000m², closed warehouses and workshops.
- Cargo: terminal spare parts, supplies and materials, various equipment

Terminal loading/unloading of bulk freight

- Shore length 140m, draft 12m with possibility of mooring of ships up to 80,000 DWT.
- Terminal capacity is 500,000t annually with a capacity of unloading 500t/h, simultaneous loading of wagons on two railway tracks, closed storage with capacity of 30,000m³, grain silo capacity of 38,000m³. The terminal has a loading and unloading station with capacity of 240t/h.
- Cargo: soy, wheat, corn and other cereals.

Terminal loading/unloading and storage of tropical fruits

- Shore length of 135m, the draft 7 m to 11.4m, possibility of mooring of ships up to 10,000 DWT. Terminal capacity is 35,000t per year. The terminal also uses a railway track and a conditioning warehouse with five separate cooling chambers with total area of 3,400m² and total capacity of 17,000m³.

Terminal for loading/unloading of general cargo

- Shore length 150m, draft of 8.7m to 10.2m with possibility of mooring of ships up to 20,000 DWT, RO - RO ramp length 24m, closed warehouse with area of 34,000m² and open storage area of 150,000m², the industrial railway track capacity is 140 wagons per day.
- Cargo: sea salt, iron fittings, wood, various palletized cargo, heavy cargo, equipment for drilling sets and special cargo, for example windmills.

Terminal for loading/unloading of of cement

- Annual capacity of 80,000t with the possibility of unloading the ship from both piers for general cargo, distribution to trucks and weighing up to 50t.

Ongoing projects

The new passenger port Gazenica is currently a running project whose last phase is scheduled to begin in 2016 (that of building the terminal buildings with technical, control, traffic and commercial contents) and is expected to be finished at the end of 2017.

Source: www.luka-zadar.hr ; www.port-authority-zadar.hr

SIBENIK

The Port of Sibenik is connected to the Croatian littoral by road, to continental Croatia and Europe by highway and it is also linked to the hinterland by railway.

TERMINALS:

Passenger terminal (Vrulje)

- Terminal capacity is 1 000 000 passengers
- total surface is 24 156 m², 3 berths

Terminal for transshipment of phosphate (Dobrika)

- terminal capacity is 1 million tonnes
- maximum ship size is 30,000t
- unloading capacity is 4000t/day
- storage capacity is 110,000t
- Cargo: phosphate, KCL, DAP, MAP, ...



Source: www.eldmarc.com

Bulk and general cargo terminal (Rogac)

- Terminal capacity is 800,000t a year, maximum ship size is 30,000t, loading capacity is 3000t/day and storage capacity is 2 x 2 500m².
- Cargo: KAN, UREA, NPR, cereals, beet strips, aluminium blocks, iron ore.

Timber terminal

- terminal capacity is 120,000m³ a year, maximum ship size is 6000t, closed storage capacity is 13,500m², open storage capacity is 55,000m²
- Extra services: drying of the timber and wood products, sorting, cutting, packing and marking.

Ongoing projects

The construction of a passenger terminal (€ 4 million) is planned and the supra-structure will be constructed based on a concession on grounds of an international tender.

Currently, the city of Sibenik has no adequate passenger terminal, and the traffic partly takes place along the shore which is specified for the transshipment of cargo. With the construction of a passenger terminal, the question of passenger traffic at the port of Sibenik will remain solved for a long time. Another problem that will be taken care of is the acceptance of cruisers, as well as the question of creating adequate working space for the harbormaster's office and the customs and port authority.

Source: www.lukasibenik.hr ; www.portauthority-sibenik.hr

SPLIT

The port ranks as the largest passenger port in Croatia and the third largest passenger port in the Mediterranean, with an annual passenger volume of approximately 4 million. The port is administered by the Port of Split Authority, and the primary concessionaires Trajektna Luka Split and Luka Ltd. Split, as well as 11 secondary concessionaires awarded concessions to use the port facilities or provide services in the port. The primary concessionaires are operating the City Port Split and Vranjic-Solin basin area, respectively, with the secondary concessionaires' active in Vranjic-Solin area of the port and the terminals based in Kastela. In the late 2000s, Port of Split Authority and the port operators, Trajektna Luka Split d.d. and Luka d.d. Split, started to implement an investment plan aimed at increasing both passenger and cargo traffic volume, scheduled to be completed by 2015, which would allow the port to handle up to 7 million passengers per year.

Transport Facilities

The Port of Split is located on the Adriatic Sea coast in a bay protected by the Split peninsula and a string of islands. Its facilities include terminals and other structures in Split, Solin and Kastela, all located on approximately 15 kilometers of coast. The port is connected by the International E-road network routes E65 and E71 carried by the Croatian A1 motorway and the D1 state road. The port is also connected with Zagreb by an electrified single-track railway, which runs through Knin and Karlovac.

TERMINALS:

The Port of Split

- Handles yachts, fishing vessels, passenger ships, navigation safety craft, sailing ships, tugboats and ferries; passenger terminal and a rail link, 28 berths for vessels up to 250m with draught up to 7.9m.

Resnik-Divulje passenger terminal

- Designed to facilitate transfer of ship passengers to the Split Airport, located just 950m away; single berth accommodating craft up to 40m with draught up to 4.5m.

Vranjic-Solin basin

- used as a container cargo terminal, comprising 5 berths, a roll-on/roll-off ramp, 8 storage warehouses, including refrigerated storage and open storage area; the terminal accommodates ships up to 198m with draught up to 10.2m; The facility is connected by railway and its own truck terminal. The terminal encompasses a 19.8ha area.

Kaštela basin A

- reserved for mooring of ships under instructions by the port authority

Kaštela basin B

- cargo terminal used by the secondary concessionaires for their own transport needs, accommodating ships with draught up to 8.2m.

Kaštela basin C

- mooring for laid-up vessels, pest control, fishing boats, etc. The terminal accommodates craft with draught up to 11.6m.

Container and RO-RO Terminal

- Yard surface 20,000m³, the container terminal has a daily capacity of 2000 TEU, is perfectly connected with a variety of big global container ports, while the modern highway and railway connect it to the rest of Europe. The terminal is serviced by three forklifts: one with bearing capacity of 22t and two of 10t each and two container handlers with bearing capacity of 44t. The terminal is equipped with a container workshop, attachment for frigo containers and other container equipment. A RO-RO ramp, with maximum draft of 7.5m, meets all international requirements. The ramp provides the ability of loading empty containers onto ships deck with quay cranes, bearing capacity 5t, as the container terminal is in the vicinity of the ramp. Between the terminal and the ramp there are two railroad tracks and a road for trucks that brings containers directly to the ships.

Truck terminal

- 80 parking spots, 24/7 entrance and payment supervising, customs clearance, customs warehousing and technical support.

Ongoing projects:

- a) **Extension and rehabilitation of the passenger wharves** on the outer side of the breakwater in the City Port of Split. Nowadays annual traffic through the Port of Split reaches the number of ca. 4.5 million passengers and 650,000 vehicles. National and international traffic in the port has been continuously increasing.. The construction of wharves on the outer side of the breakwater started in June 2014. The project provides for the construction of two wharves for berthing of ships in national and international traffic of passengers and vehicles, and berthing of cruise vessels.

The construction works are divided in two phases: phase I of the works should be completed by January 2016, and phase II by the end of July 2016.

The completion of the works shall provide for a larger operating area thus enabling a better flow of passengers and vehicles, higher safety of traffic in the port and higher quality of port services.

- b) **EcoPort**

Considering the construction of new infrastructure in the Port of Split, and according to contemporary requests to implement the environmental protection policy standards, and peculiarities of the area managed by Port Authority Split, particularly due to location of the port (six fully separated locations – basins, one of them situated practically in the old city core), environmental conditions, and peculiarities of administrative powers and competences (system of concessions, large number of concessionaires and public stakeholders), the need has arisen to formalise and standardise the environmental management in the Port of Split, applying EcoPort (ESPO) principles.

Environmental management system according to ESPO (EcoPort EMS) principles includes a classical system of quality management and environmental protection management, a traditional system of environmental protection action plans – plans for environmental preservation and development of institutional management documents; it is oriented to all the partners, particularly to social community and communication with the community. EcoPort in fact develops a close interconnection between development, environmental

protection and management based on sustainable development principles. EcoPort is developed as the process which enables all the partners' continuous and active participation, allowing them to contribute in resolving or preventing the problem, and enables the impact, control and supervision of all the procedures within the process.

Source: www.portsplit.com ; www.lukasplit.hr

DUBROVNIK

Dubrovnik is a prestigious Mediterranean destination for cruise ships that are in transit. The port consists of the following components:

- Berth Grad - passenger traffic
- Port of Gruz - passenger traffic; receives up to three mega cruisers from round trips as well as passenger ferries on regular routes between all Croatian major ports and Italian ports of Ancona, Bari and Pescara.

Ongoing projects:

1200 m of operative quay

FIRST PHASE

The project of reconstruction and rebuilding of an operative quay 810 m long line, within the Gruž Bay is intended mainly for cruise ships (completed in 2009).

The works on the first phase of the infrastructure project at the area Batahovina I, that started in November 2010 creating new 220 m of operative quay (completed in 2011).

Dubrovnik Port Authority is planning to carry out the second phase of the infrastructure project Batahovina II, creating additional 400 m of quay line.

The Batahovina area will be intended for local and international ferry traffic and oriented on the development of multi-modal transport.


SECOND PHASE

The second phase of modernization of Passenger Port Dubrovnik, port superstructure project / development of port facilities is at the moment in the preparation phase which includes a feasibility study, a environmental study, architectural solutions and the production of tender documentation.

Within the next few years, Dubrovnik Port Authority expects to have a modern port with cruise passenger terminal, large multipurpose trade center, public garage, city congress hall and a huge range of different leisure and entertainment facilities.

Links: www.portdubrovnik.hr

Maritime Transport of Passangers

| | | |
|---|---|--|
|  <p>Source: www.jadrolinija.hr</p> | JADROLINIJA Biggest Croatian ferry service is provided by national company Jadrolinija, headquartered in Rijeka. Offers transport of passangers between mainland and islands, in between islands and international lines. | |
| Other companies: | | |
| MIATRADE d.o.o. www.miatours.hr | RAPSKA PLOVIDBA d.d. www.rapska-plovidba.hr | G & V LINE d.o.o. www.gv-line.hr |
| LOŠINJSKA PLOVIDBA - HOLDING d.d. www.lp-holding.hr | LINIJSKA NACIONALNA PLOVIDBA d.d. www.lnp.hr | |

Maritime Transport of Cargo (SHIPPERS)

| | | | |
|--|--|---|---|
| ATLANTSKA PLOVIDBA d.d. www.atlant.hr | TANKERSKA PLOVIDBA d.d. www.tankerska.hr | PANALPINA CROATIA d.o.o. www.panalpina.com | ANIMO d.o.o. www.animo.hr |
| KUEHNE & NAGEL d.o.o. www.kuehne-nagel.com | JADROŠPED d.o.o. www.jadrosped.hr | ULJANIK PLOVIDBA d.d. www.uljaniksm.com | |
| ŠPEDTRANS WORLD d.o.o. www.spedtrans.hr | ADRIATIC LOGISTIKA d.o.o. www.adriaticlogistics.hr | BRODOSPAS d.d. www.brodospas.net | |
| JADROAGENT d.d. www.jadroagent.hr | PELJARSKO TRGOVAČKO DRUŠTVO BRANKO PILOT d.o.o. www.branko-pilot.hr | RAPSKA PLOVIDBA d.d. www.rapska-plovidba.hr | |
| DAMCO d.o.o. www.damco.com | ANGLO ADRIATIC POMORSKA AGENCIJA d.o.o. www.angloadriatic.hr | FELBERMAYR CROATIA d.o.o. www.felbermayr.cc | |
| JADROPLOV d.d. www.jadroplov.com | SPLITSKA PLOVIDBA d.d. | www.bandic.hr | |
| ELDMARC d.o.o. www.eldmarc.com | | | |

Croatian Ministry of Maritime Affairs, Transport and Infrastructure Website: www.mppi.hr

Port Authority Websites:

- PORT AUTHORITY RIJEKA: www.portauthority.hr
- PORT AUTHORITY PLOČE: www.port-authority-ploce.hr
- PORT AUTHORITY ZADAR: www.port-authority-zadar.hr
- PORT AUTHORITY ŠIBENIK: www.portauthority-sibenik.hr
- PORT AUTHORITY SPLIT: www.portsplit.com
- PORT AUTHORITY DUBROVNIK: www.portdubrovnik.hr

Technical Information on Croatian Ports: www.eldmarc.com

Port Websites:

- PORT RIJEKA: www.lukarijeka.hr
- PORT PLOČE: www.luka-ploce.hr
- PORT ZADAR: www.luka-zadar.hr
- PORT ŠIBENIK: www.lukasibenik.hr
- PORT SPLIT: www.lukasplit.hr
- PORT DUBROVNIK: www.dubrovnik-port.com

Croatian Bureau of Statistics: www.dzs.hr

RIVER TRANSPORT IN CROATIA

Croatia is on the important Danube waterway, which connects Eastern and Central Europe. The major ports are Vukovar on the Danube, Osijek on the Drava, Sisak and Slavonski Brod on the Sava.



Perennially navigable rivers:

- Danube
- Sava
- Drava

Total waterway length:

785 km

Source: www.propisi.hr

STATISTICS: Transport of Goods on Inland Waterways in Croatia

| <i>TRANSPORT OF GOODS ON INLAND WATERWAYS</i> | <i>Unit of Measurement</i> | 2015 | 2014 | 2013 |
|---|----------------------------|------|------|------|
| National Transport | '000t | 51 | 51 | 42 |
| International transport | '000t | 515 | 441 | 535 |
| Transit | '000t | 6076 | 4886 | 5246 |

Source of data: www.dzs.hr

River Ports

Croatian river ports on inland waterways are under jurisdiction of the Ministry of Maritime Affairs, Transport and Infrastructure, each having their own port authority which grants concessions for usage.

Port Osijek

The proximity to the port and use of inland waterway transport brings Europe and the world closer and makes shipments of raw materials and products more favourable. Experience in managing different types of cargo and capacities guarantees the competence in performing port activities. The Osijek Port has all that is necessary to meet the needs of economic operators in its area. Primarily, human resources and technical staff are prepared for any kind of challenge – from reloading of heavy general cargo, bagged goods and bulk cargo, to the most demanding users' requirements. Source: www.port-osijek.hr

Port Vukovar

Vukovar port is situated on the downstream flow of the Danube, on its right coast. The port stretches towards the east and west and is 850m long and 45m wide. The port is very well situated to the main current of the river, which makes it possible for the port to be navigable during the whole year regardless of the water level, so even during the period of the lowest water levels of the Danube the port is operational and active. It has the technical characteristics of E port to the European Agreement on Main Inland Waterways of International Importance (AGN; 16/98), the status of an international river port.

The port has a terminal for embarkation of bulk cargo (cereal, oil-seeds, mineral fertilizers) with the equipment capacity of 120t/h and separation of pebbles capacity of 39m³. During 2001 the new vertical coast has been put into use, 50m long, which makes it possible to transship goods even at the time of lowest water level. Currently the port transships about 100.000t of different kinds of goods during the year (mostly sugar in bags, cereal, oil-seed, mineral fertilizers), although its capacities are greater. In the European intermodal traffic, Port of Vukovar has become an important part of the bypass between the internal European waterways and the Danube through Croatian territory to the Mediterranean.

Source: www.port-authority-vukovar.hr ; www.luka-vukovar.hr

Port Slavonski Brod

With the Inland Waterway Ports Act, the Government of the Republic of Croatia founded the Port Authority in Slavonski Brod as a public institution in charge of management and development of ports and piers on the Sava river. The Port Slavonski Brod was declared a very important port for the Republic of Croatia.

Source: www.en.lucka-uprava-brod.hr

Port Sisak

Port Sisak is divided into two basins: Basin Crnac for loading and unloading of crude oil, refined oil and derivatives (through a pipeline it is connected to the oil refinery in Sisak) and Basin Galdovo that functions as a shipbuilding dock.

Source: www.luckaupravisak.hr

HRB DUNAVSKI LLOYD-SISAK d.o.o.

Port Sisak is home port of only Croatian Inland waterway shipper “Dunavski Lloyd Sisak”



Source: www.dunavski-lloyd.hr

Dunavski Lloyd performs inland waterway transport and combined transport of goods on the Danube, Drava and Sava and agency services in the ports of Osijek and Vukovar.

Related Links

Croatian Ministry of Maritime Affairs, Transport and Infrastructure Website: www.mppi.hr

Croatian Agency for Inland Waterways: www.vodniputovi.hr

International Sava River Basin Commission Website: www.savacommission.org

Hrvatske Vode (“Croatian Waters”, legal entity for water management): www.voda.hr

Inland Navigation and Inland Ports Act (NN [109/07](#), [132/07](#), [51/13](#), [152/14](#)): www.zakon.hr

Croatian Bureau of Statistics Website: www.dzs.hr

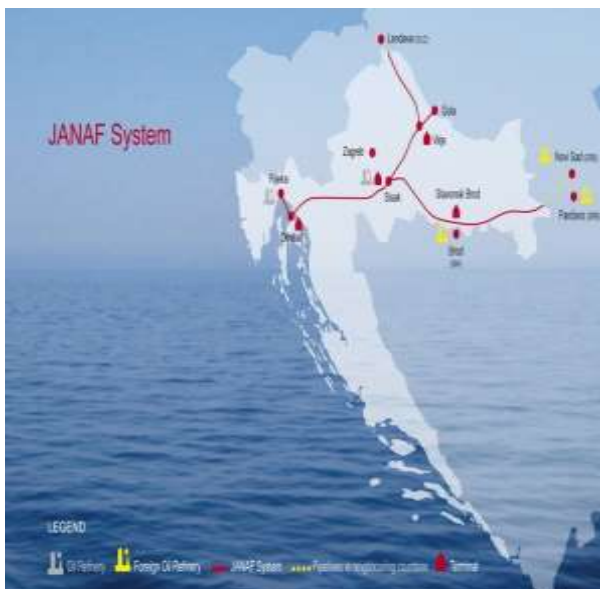
PIPELINE TRANSPORT IN CROATIA

Adria Pipeline (OIL)

The Adria pipeline starts at the Omišalj Oil Terminal. From Omišalj the main line runs to Sisak, while spur pipelines connect the terminal and refinery in Urinj. In Sisak the northern and eastern branches are split. The northern branch runs further to Virje, where a branch section runs to Lendava in Slovenia, and Gola, where the pipeline crosses the Croatian–Hungarian border. It continues through Hungary up to the Duna refinery in Százhalombatta, where it is connected with the southern line of Druzhba and the Druzhba's branch between Hungary and Slovakia. The annual capacity of the Hungarian section is 10 million tonnes of oil per annum. The maximum rated capacity in the Slovak section is at 3.68 million tonnes per year.

The eastern branch runs from Sisak to Slavonski Brod. From there, the branch section runs to Bosanski Brod in Bosnia and Herzegovina, while the main line continues to Sotin at the Croatian–Serbian border. In Serbia, the pipeline runs to Novi Sad and further to Pančevo.

- JANAF SYSTEM



Source: www.janaf.hr

The JANAF system was built as an international crude oil transportation system from the Port and Terminal of Omišalj, Island of Krk, Croatia to both local and foreign refineries in Eastern and Central Europe. The designed capacity of the pipeline amounts to 34 million tons of oil annually (MTA), while its installed capacity is 20 MTA.

Pipeline is around 622 km long comprising the following sections:
Omišalj – Sisak
Sisak – Virje – Gola
Virje – Lendava
Sisak – Slavonski Brod
Slavonski Brod – Sotin

The JANAF system consists of the following:

Crude oil handling Omišalj Terminal on the Island of Krk, with a storage tank farm of 1.000.000 m³ and 60000 m³ for oil products; the accompanying pumping and metering stations and the Port of Omišalj. Crude oil handling terminals in Sisak, Virje and Slavonski Brod, with storage tank farms (100,000m³ in Sisak and 40,000m³ in Virje), with the accompanying pumping and metering stations. Submarine oil pipeline Omisalj-Urinj, linking the Omisalj Terminal with INA-Oil Refinery in Rijeka, oil products terminal Zitnjak-Zagreb (capacity 142,000m³). JANAF has a total storage capacity of 1.54million m³ for crude and 202,000m³ for oil products.

Source: www.britannica.com/topic/Adria-pipeline

Városföld-Slobodnica Pipeline (GAS)

The Városföld–Slobodnica pipeline is a bi-directional high pressure natural gas pipeline between Városföld in Hungary and Slobodnica in Croatia. It is a part of the New European Transmission System. The pipeline is operated by FGSZ in Hungary and by Plinacro in Croatia.

The length of the pipeline is 293 kilometres, of which 205 kilometres is located in Hungary and 88 in Croatia. The pipeline has a diameter of 800 millimetres and its working re-assure is 75 bars (7,500 kPa). Its capacity is 7 billion cubic metres per annum. The pipeline has compressor stations at Városföld and Băta, and international metering stations at Drávaszerdahely and Donji Miholjac.

Source: www.plinacro.hr

Ionian-Adriatic Pipeline (GAS), *Planned*

An international goodwill agreement has been signed regarding a proposed westbound pipeline that would carry natural gas from the Caspian basin, starting from Greece via Albania and the Adriatic Sea to Italy and further to Western Europe. Leaders of Albania, Bosnia Herzegovina, Montenegro and Croatia signed the document at a ceremony in the Albanian capital Tirana. The agreement covers the construction of two new pipelines - the Trans-Adriatic (TAP) and the Ionian-Adriatic (IAP). In Split, the pipeline would be connected with the existing gas transmission system of Croatia. In addition, it may be connected with other new gas infrastructure, including the proposed Adria LNG terminal in Krk. The length of the pipeline would be 516 kilometres. The pipeline would be bi-directional and its capacity would be 5 billion cubic metres of natural gas per year.

Source: www.naturalgaseurope.com

Related Links

Croatian Pipeline Operators:

- JADRANSKI NAFTOVOD (JANAF): www.janaf.hr
- Plinacro d.o.o.: www.plinacro.hr

MULTIMODAL TRANSPORT IN CROATIA

The comparative advantage of the Republic of Croatia lies in the interconnectedness of Pan-European traffic corridors, namely V, VII and X, with the ports of the Adriatic basin and the flows of the rivers Danube and Sava. The advantage is visible in determining the EU key corridors, namely, out of nine key EU corridors, two of them (the Mediterranean Corridor and the Rhine-Danube Corridor) cut through Croatia.

The Adriatic is an arm of the Mediterranean Sea, most deeply cut into the European mainland. By shipping the goods in containers across the sea to the northern Adriatic, without doubt, the cheapest mode of transportation is used, thereby maximally shortening the route, as opposed to more expensive transport by land. It is the shortest and the most economical route to connect Europe with the Mediterranean, and further through the Suez Canal with the majority of Asian, African and Australian countries.

The European Union itself has, in its long-term transport strategy, listed the Port of Rijeka as the head intermodal centre and the starting point of one of the transport routes.

The sea route between the Suez Canal and the Port of Rijeka in the northern Adriatic extends to a distance of only 1,254 km, while the routes to the ports of the North Sea match nearly three times the distance.

Therefore, the navigation from the Suez Canal to the ports of the North or the Baltic Sea is 10 to 14 days longer (one direction only). In the light of the rapid increase in fossil fuel prices, the advantages of the Adriatic route become more and more evident. The Adriatic route connects two large areas of the world, complementary in their economies.

Based on the construction project of the new Zagreb - Rijeka lowland double line electrified railway, it stretches from Zagreb to Karlovac, passes near Duga Resa and Ogulin to Josipdol, Dreznica and runs through the Velika Kapela to reach Novi Vinodolski. One branch line would lead to Bakar and Rijeka, and the other one across the newly built bridge for road and railway transport, directly to the aforementioned business zone of the Omisalj (Krk Island) container terminal.

The new Botovo - Zagreb - Rijeka railway (Hungary - Croatia border) would be 328.7 km in length, while the length of the Zagreb - Rijeka line would be shortened by 57 km. The construction of this railway will boost the freight transport five times in capacity, cargo trains will run at the approximate speed of 120 km/h, while passenger trains at 160 to 200 km/h. The cargo traffic will comprise 80%, and the passenger traffic 20% of the total transport.

Railway transportation, in combination with inland river transport, is the most appropriate mode of transport of goods, since it completely meets the requirements of the '3E' Model (ecological sustainability, energy rationalization and economic benefits). For this reason, the EU dictates that this combination of transport modes and means (railway and river mode) should comprise 85%, while the roads transport only 15% of the total transportation.

At the current time a project for establishing a multimodal route for connecting the Mediterranean Sea with northeastern Europe through Hungary has been started and Croatia will develop multimodal transport.

Source: bib.irb.hr/datoteka/741855.dpn26780_Naletina_SC_Book_1.pdf ; www.shortsea.hr

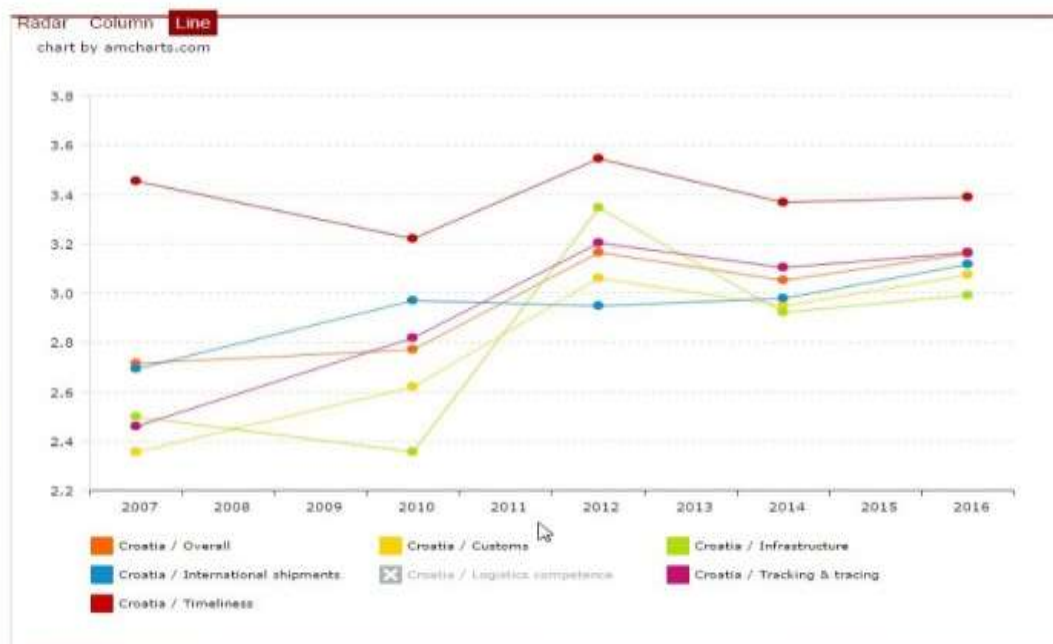
LOGISTICS

Companies operating in Croatia mostly have their own logistic networks for their needs (eg. Kaufland; has its own logistic distribution centre), therefore integrated logistic service specialist suppliers are not numerous. It is a new field of business in Croatia as outsourcing of warehousing, transport and distribution isn't common. As of recent education in the field became available too; Transport Systems and Logistics can be studied at undergraduate level at Faculty of Transport and Traffic Engineering, courses and seminars are also available.

Logistics Report of Croatia

In 2016, Croatia's Logistics performance index places it on 51st place in global ranking. In 2014, Croatia was placed 55th.

Country Score Card: Croatia 2016



Source: ipi.worldbank.org/international/scorecard/line/254/C/HRV/2016#chartarea

Related links

Worldbank, data source for macroeconomic and sector related statistics for Croatia:

www.data.worldbank.org/country/croatia

- Trade and transport integration:

www.worldbank.org/projects/P093767/trade-transport-integration?lang=en

- Transport projects:

www.worldbank.org/en/topic/transport/projects/all?countryname_exact=Republic+of+Croatia

European Bank for Reconstruction and Development: www.ebrd.com

Transport Research and Priorities in Croatia:

www.wbcinco.net/attach/NationalBackgroundReportonTransportforCroatia.pdf

International Transport Forum:

www.internationaltransportforum.org/jtrc/environment/CO2/Croatia.pdf

Croatian Supply Chain Management & Logistics Portal: www.logistika.com.hr

CONCLUSION

In general, Croatia has a good network connection in terms of transportation. It is connected with the most important spots in Croatia and with the EU, but still there is a deep gap between the different transport sectors.

Croatia has a highly well-developed road network, while the railway sector has huge lacks as a result of the inactivity in the last 50 years, in terms of infrastructure improvements which are now being addressed. With education, concentration on improving the infrastructure and funding Croatia aims to establish an important transit route for integrated and intermodal railway and maritime transport (Railway Hungarian border – Port of Rijeka).