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TRANSPORT



Transport

Roads and Bridges

Macao has 314.5 kilometres of roads and highways, including 183.1 kilometres on the Macao peninsula, 80.9 kilometres on Taipa island and its reclaimed areas, and 40.6 kilometres on Coloane island.

Three bridges and a strip of reclaimed land link the Macao peninsula with Taipa and Coloane. Opened to traffic in October 1974, the Nobre de Carvalho Bridge (also known as the Macao-Taipa Bridge) is 2.5 kilometres long. The 4.4-kilometre Friendship Bridge was completed in April 1994. The 2.1-kilometre Sai Van (West Bay) Bridge was completed in December 2004 and opened to traffic in January 2005. In addition, the 900-metre Lotus Flower Bridge was completed in December 1999 and opened to traffic in March 2000. Linking the reclaimed area between Taipa and Coloane with Zhuhai City's Hengqin island and connected to the Guangzhou-Zhuhai Expressway, this bridge is the second land route between Macao and its neighbouring cities.

Macao has 417.4 kilometres of roads for motor vehicles. This figure includes 199.5 kilometres on the Macao peninsula, 135.4 kilometres on Taipa island and its reclaimed areas, 61.3 kilometres on Coloane island, five kilometres on Nobre de Carvalho Bridge, 10.2 kilometres on the Friendship Bridge, 4.2 kilometres on the Sai Van Bridge and 1.8 kilometres on the Lotus Flower Bridge.

Public Transport

Macao has a well-established public transport network connecting the Macao peninsula and the two islands. A variety of vehicles, including buses and taxis, are available for local residents and tourists.

Public Bus Service

The new bus service in Macao was launched on 1 August 2011. The total number of bus operators increased from two to three. At the end of 2012, there were 677 buses in service, including 230 minibuses, 165 medium-sized buses and 282 large buses, on 62 routes. In 2012, a total of 156,749,045 passengers were served, an increase of 14.51 percent over the 2011 figure, covering a total distance of 39,281,688 kilometres, an increase of 23.42 percent over the figure in 2011.

The Government signed a seven-year contract with Transportes Urbanos de Macau, Transportes Companhia de Macau and Reolian Public Transport for the provision of mass road passenger transport in Macao. Under the contract provisions, the three companies provide services, vehicles, equipment, staff and supporting facilities, and receive service charges specified in the contract with the Government. All fares paid by passengers were collected by the MSAR government.

Sociedade de Transportes Colectivos de Macau

Sociedade de Transportes Colectivos de Macau (TCM) (previously known as Companhia de Transporte de Passageiros entre Macau e as Ilhas) originally provided maritime passenger

transportation services between Macao and the two islands. During the 1950s, it acquired several bus companies that served residents of Taipa and Coloane, and began to operate public buses. In 1986, Companhia de Transporte de Passageiros entre Macau e as Ilhas was restructured as TCM and became fully responsible for all public buses serving Macao and its islands.

In August 2011, public bus services in Macao began operating under the new government-led model and TCM purchased 63 buses that met Euro IV standards. TCM now has a fleet of 145 buses and operates 13 bus routes on Macao peninsula connecting the Macao peninsula and the outlying islands. In 2012, it carried over 32.26 million passengers and covered 6.37 million kilometres.

Transportes Urbanos de Macau (Transmac)

Transportes Urbanos de Macau (Transmac) was previously known as Companhia de Autocarros Fok Lei. Founded in 1952, it was restructured and changed its name to Transportes Urbanos de Macau in July 1988. It is the largest bus company in Macao. The company introduced the ISO Quality Management System in 2004 for overall management, making it the first franchised bus company in Macao to pass the ISO 9001:2008 Quality Management System.

Transmac has more than 600 employees and a fleet of 287 air-conditioned buses that serve 21 bus routes covering Macao, Taipa and Coloane islands. During 2012, over 66.31 million passengers were carried and about 16.57 million kilometres covered.

Reolian Public Transport

Reolian Public Transport is a joint venture between Veolia Transport RATP and HN Group. It has a strong management team and technicians with varied expertise from Macao, France, Australia, the US, mainland China and Hong Kong.

Reolian Public Transport commenced operation in August 2011, running 26 bus routes with a fleet of 245 buses. In 2012, it covered about 16.50 million kilometres and carried more than 57 million passengers.

Reolian Public Transport received accreditation for its Occupational Health and Safety System. On 8 December 2012, it became the first bus company in Macao to secure OHSAS 18001 certification.

Taxis

At the end of 2012, Macao had 954 licensed black taxis with cream roofs, plus 100 radio-dispatched yellow taxis. There were 10,911 licensed taxi drivers.

Traffic Management Transport Bureau

The Transport Bureau was established in May 2008. It is responsible for: studying, planning,

promoting and implementing road transport policies of the Government; pursuing road improvements; regulation of vehicles; as well as installing, maintaining and improving transportation and pedestrian infrastructure.

Vehicle Statistics

At the end of 2012, there were 217,335 vehicles on Macao's roads, including 115,623 motorcycles, and 95,063 light vehicles. During the year, 17,621 new vehicles were registered, a slight decline of 0.45 percent over the 2011 figure. Of these, 6,833 were motorcycles and 9,068 were cars.

Traffic Monitoring

Traffic management and monitoring are essential for ensuring the safe and orderly operation of the transport system. The Government has installed closed circuit TV (CCTV) and radar speed monitoring systems to monitor traffic conditions on the Macao-Taipa Bridge and main roads. They include 30 video cameras and six two-way speed monitoring spots on the Friendship Bridge, 65 video cameras, two one-way and one two-way speed monitoring spots on the Sai Van Bridge, and 10 video cameras and two two-way speed monitoring spots on the Ponte Governador Nobre de Carvalho. Also, 157 video cameras, 15 speed monitoring radar units, and 25 sets of electronic systems with a total of 82 cameras for monitoring vehicles jumping red lights have been installed in various downtown locations. During 2012, the monitoring systems identified 9,752 cases of speeding and 1,114 cases of jumping red lights. A further 9,583 cases were identified under the illegal parking monitoring system.

Parking

As at 31 December 2012, Macao had 34 public car parks, which together provide 12,515 parking spaces for light vehicles, 730 spaces for heavy vehicles, and 8,498 spaces for motorcycles.

Public Car Parks in Macao	
Name of car park	Available parking spaces
Pak Lane Car Park	519 light vehicles
Pak Tou Car Park	211 light vehicles
Pak Lai Car Park	355 light vehicles
Pak Lik Car Park	417 light vehicles
Pak Lok Car Park	471 light vehicles, 300 motorcycles

(Cont.)

Public Car Parks in Macao	
Name of car park	Available parking spaces
Pak Vai Car Park	502 light vehicles
Pak Kai Car Park	208 light vehicles
Pak Wai Car Park	1,019 light vehicles
Pak Keng Car Park	171 light vehicles
Pak Ying Car Park	722 light vehicles
Pak Wu Car Park	682 light vehicles, 196 motorcycles
Pak Kong Car Park	287 light vehicles, 31 heavy vehicles
Sewage Treatment Plant Car Park	276 light vehicles, 459 heavy vehicles
Vasco da Gama Garden Car Park	171 light vehicles, 113 motorcycles
Iao Hon Park Multi-Storey Car Park	406 light vehicles, 404 motorcycles
Art Garden Car Park	351 light vehicles, 446 motorcycles
Ferreira do Amaral Roundabout Car Park	247 light vehicles, 632 motorcycles
Ho Yin Garden Car Park	415 light vehicles, 542 motorcycles
Malaca Street Car Park	215 light vehicles, 563 motorcycles
Taipa Temporary Heavy Vehicle Parking Area	224 heavy vehicles
Flor de Lotus Road Heavy Vehicle Car Park	240 heavy vehicles
S. Lourenco Market Car Park	60 light vehicles, 74 motorcycles
Macao Science Center Car Park	415 light vehicles, 413 motorcycles
Lido Car Park	62 light vehicles, 24 motorcycles
Transport Bureau Car Park	148 light vehicles, 178 motorcycles

(Cont.)

Public Car Parks in Macao	
Name of car park	Available parking spaces
Cheng Choi Building Car Park	304 light vehicles, 518 motorcycles
Mong Sin Block Car Park	133 light vehicles, 236 motorcycles
Almirante Sergio Road Car Park	155 light vehicles, 106 motorcycles
Fai Fu Building Car Park	215 light vehicles, 194 motorcycles
Flor de Lotus Road Car Park	416 light vehicles, 512 motorcycles
Tranquilidade Road Car Park	58 light vehicles, 93 motorcycles
Parque Central da Taipa Car Park	1,343 light vehicles (including 10 for disabled), 1,384 motorcycles
The Taipa Temporary Ferry Terminal Car Park	740 light vehicles, 196 motorcycles
Edificio Mong In Car Park	143 light vehicles, 242 motorcycles
Taipa TN27 Edificio do Lago Public Car Park	678 light vehicles, 1,132 motorcycles

As at 31 December 2012, there were 9,309 parking meters for light vehicles, of which 4,630 were two-hour parking meters, 4,679 were five-hour parking meters. There were 3,051 non-metered parking spaces. There were also 40,071 motorcycle parking spaces, of which 222 were two-hour parking meters and 382 were five-hour parking meters.

Road Safety

The Road Traffic Law promotional campaign was held in 2012, jointly organised by the Public Security Police, the Legal Affairs Bureau, the Civic and Municipal Affairs Bureau, the Lands, Public Works and Transport Bureau, and several non-governmental organisations. It publicises the importance of obeying traffic regulations, to strengthen the understanding of laws and sense of road safety among local residents, and thus reduce the number of traffic accidents. The Traffic Department of the Public Security Police also teamed up with schools, transportation companies and non-governmental organisations to stage games and lectures related to road safety. Their objective was to reinforce residents' understanding of road safety by means of long-term educational efforts. During 2012, a total of 5,951 people from 64 schools and 31 other organisations participated in the Traffic Department's road safety promotional activities.

Cross-border Traffic

Cross-border Land Routes

Two land routes link Macao and mainland China: the Border Gate and Lotus Flower Bridge Checkpoint (Cotai checkpoint). The volume of cross-border traffic has grown rapidly, in line with increasing exchanges between Macao and the mainland.

The Border Gate Checkpoint is open to passengers from 7.00am to midnight daily, and for cargo from 7.00am to 9.00pm (except for authorised vehicles). The Lotus Flower Bridge Checkpoint is open to passengers from 9.00am to 8.00pm, and for cargo from 8.00am to 8.00pm. The Zhuhai-Macao Crossborder Industrial Zone Border Checkpoint is open 24 hours per day.

A total of 4,465,854 vehicles entered or left Macao by land during 2012. The gross weight of containers imported or exported by land was 30,681 tonnes, a decrease of 13 percent; re-exported containers totalled 10,986 tonnes.

During 2012, there were 14,829,681 visitor arrivals by land, an increase of 3.1 percent over the previous year's figure. Of these, 13,590,514 entered via the Border Gate; tourists from mainland China and Hong Kong represented 83.1 percent and 11.5 percent of the total, respectively. The number of visitors who arrived via the Cotai checkpoint was 1,217,618. During the year, there were 21,664,342 arrivals of Macao residents via the Border Gate, with 376,552 via the Cotai checkpoint.

Cross-border Marine Transportation Services

The Outer Harbour Ferry Terminal, Taipa Ferry Terminal, and Inner Harbour Ferry Terminal provide cross-border transportation services for passengers travelling between Macao and Hong Kong and the mainland. Scheduled passenger ferries to Hong Kong and the mainland are operated by the Shun Tak-China Travel Ship Management Limited; Far East Hydrofoil Company; Hong Kong-Macau Hydrofoil Company; Shun Tak – China Travel Macau Ferries Limited; Yuet Tung Shipping Company; and Cotai Waterjets (Macao) Limited.

Outer Harbour Ferry Terminal

The Outer Harbour Ferry Terminal commenced operations in 1993. Its two vertical piers provide 14 berths for a total of 14 passenger vessels at one time. The main building has a floor area of over 6,000 square metres, with a helicopter pad on its rooftop.

The Government commenced the Outer Harbour Ferry Terminal expansion project in late 2006, with an aim of increasing the usable area inside the terminal, easing pressure arising from the sharp increase in visitor numbers. The Government installed a self-service clearance system in 2009, and from 2009 to 2011 undertook improvement work at public facilities to provide a more comfortable environment.

The operation management contract of the Outer Harbour Ferry Terminal ended in December of 2011, and from 21 December the management of the harbour was taken up by the Government. The Government plans to commence enhancement work of the Outer Harbour Ferry Terminal in

2013, through improving the overall layout to streamline passenger flow and luggage transfer, to provide quality and convenient services to residents and visitors.

Taipa Ferry Terminal

The permanent Taipa Ferry Terminal was under construction. It will occupy 144,000 square metres with 16 berths for ferries, three multi-functional berths and a helicopter pad on its rooftop.

Inner Harbour Ferry Terminal

The Inner Harbour Ferry Terminal officially came into service in February 2008, and moved from Terminal 14 to Terminal 11A which has a gross area of over 1,450 square metres. The ferry terminal operates routes to and from Wanzai District from 8.00am to 6.00pm.

According to the Statistics and Census Service, during 2012, there were 112,691 scheduled ferry sailings between Macao and Hong Kong, and 27,264 scheduled ferry sailings between Macao and mainland China.

According to statistics provided by the Public Security Police, during 2012, some 11,484,840 passengers arrived in Macao by sea, an increase of 4.2 percent over the 2011 figure. Of these, 7,042,005 entered Macao via the Outer Harbour Ferry Terminal, 541,090 visitors via the Inner Harbour, and 3,901,745 via the Taipa Temporary Ferry Terminal.

In 2012, 87,707 containers or 119,927 TEUs (twenty-foot equivalent units) were shipped in and out of Macao by sea, representing increases of 17.10 percent and 17.59 percent, respectively, on the 2011 figures.

Cross-border Helicopter Services

Helicopters are the most convenient way to travel between Macao and Hong Kong. A helicopter passenger transportation service was inaugurated in November 1990. Jointly operated by Helicopters Hong Kong (Heli HongKong) and East Asia Airlines, the service has reduced the travelling time between Hong Kong and Macao to only 16 minutes. It operates from 9.00am to 11.00pm, with scheduled flights in each direction every 30 minutes. In addition, East Asia Airlines began operating daily passenger helicopter flights between Macao and Shenzhen in April 2002. In 2012, there were 14,920 helicopter flights to and from Hong Kong via the Outer Harbour Ferry Terminal, and 3,412 flights between mainland China and Macao.

Ports

Outer Harbour

Located on the east coast of the Macao peninsula, the Outer Harbour is designated for scheduled ferries between Macao and Hong Kong and Shenzhen. Its watercourse is 120 metres wide and 4.4 metres deep.

To streamline the sea passageway to the east of Friendship Bridge, the Maritime Administration restructured a fairway off eastern Friendship Bridge leading to the Inner Harbour, making the fairway straight and setting up a more advanced system of synchronised flashing beacons.

Inner Harbour

Located on the west coast of the Macao peninsula, the Inner Harbour has many piers for loading and discharging cargo, plus Pier 11A, the ferry terminal, used by passenger ferries licensed by the Maritime Administration. The South Sampan Pier between Piers 8 and 9 is used by crewmembers of ships berthed in the Inner Harbour who hold Macao ID Cards, or who are authorised to land and depart by the relevant Government authority, with prior notice to the Macao Customs Service. The Inner Harbour's approach channel is 45 metres wide, and its fairway is 55 metres wide and 3.5 metres deep.

Taipa

The Taipa Temporary Ferry Terminal is situated on the north-eastern tip of Taipa island, and is exclusive for scheduled high-speed ferries shuttling between Macao and Hong Kong, and between Macao and the Pearl River Delta area. Its fairway is 120 metres wide and 4.4 metres deep.

Ka Ho Harbour

Located on the northeast shore of Coloane island, Ka Ho Harbour consists of the Fuel Oil Terminal, Cement Terminal, Ka Ho Container Port, and Power Plant Terminal. Its approach channel is 75 metres wide and 4.4 metres deep.

Ka Ho Container Wharf and Fuel Oil Terminal

Phase One of Ka Ho Container Wharf commenced operations in December 1991. With a total construction area of 42,000 square metres (now 49,524 square metres), it includes a container wharf, container yard and warehouses. At present, it has two berths, of 135 metres and 171.4 metres in length; a 10,428-square-metre cargo working area; a 23,828-square-metre container yard; and 2,850 square metres of cargo warehousing space. The terminal's annual handling capacity is 100,000 TEUs.

In 2012, Ka Ho Harbour handled 12,905 inbound TEUs (twenty-foot equivalent units) and 11,807 outbound TEUs; both figures include re-exports.

The Fuel Oil Terminal commenced operation in June 1995. It can store a wide variety of fuel oil imported into Macao, and can simultaneously load and unload two fuel-carrying vessels. It has 14 storage tanks with a combined capacity of 86,000 cubic metres.

Marine and Water Bureau

The Marine and Water Bureau is a department with authorities and duties relating to maritime

affairs, and is responsible for exercising its power to promote and coordinate the development of maritime activities.

To promote and assist economic development of the fishery sector, in 2007 the Government promulgated By-law No. 3/2007 to establish the Fisheries Development and Support Fund.

The Marine and Water Bureau also provides port management and services including vessel inspections, pilot services, vessel traffic control, search and rescue operations, hydrographic survey, dredging and port cleaning.

Ships

Maritime Registration

By law, all vessels engaged in economic activities – including freighters, passenger vessels, fishing boats and auxiliary boats – must be registered with the Marine and Water Bureau and the Commercial and Movable Goods Registry. The registration procedures are designed to verify its conformity with official requirements concerning technology, safety and environmental protection. Maritime registration is a prerequisite for vessels seeking commercial registration. There were 300 registered vessels at the end of 2012, including six that were newly registered during the year.

In addition, maritime and commercial registration is required for vessels over 2.5 metres in length that are used for non-profit-making purposes, such as water sports, fishing or recreational activities. These include ocean-going, coastal, inshore, channel and river pleasure boats. There were 107 registered vessels in this category at the end of 2012, including 14 new registrations.

Seafarer Registration

According to the law, Macao residents aged 18 or above may apply for seafarer registration with the Marine and Water Bureau. All Macao residents who wish to conduct professional maritime activities on commercial vessels, auxiliary boats or fishing boats are required to register with the bureau beforehand. At the end of 2012, a total of 251 people held seafarer's books issued by the bureau.

Maritime Training School

The Maritime Training School is Macao's only nautical education institution. Its principal objectives are to provide theoretical and practical training in maritime subjects and harbour management, as well as related scientific knowledge.

Most of the training school's students are Marine and Water Bureau and Macao Customs Service staff members, as well as sailors, fishermen and nautical athletes in Macao. The training school also provides after-school and summer vacation activities for youngsters.

The Shipyard

The Shipyard is a department under the Marine and Water Bureau. As well as shipbuilding and ship

repairs, it is responsible for maintaining and repairing Government vehicles, verifying their status and inspecting them, handling newly purchased vehicles, as well as making and installing vehicle identification plates. At present, most of the vessels built and repaired at the Shipyard belong to the bureau and Macao Customs Service. In 2012, the Shipyard monitored the construction and delivery of an 11-metre hydrographic surveying ship and coordinated the building of a rescue ship for the bureau. The Shipyard also monitored the construction and delivery of a 30-metre patrol ship as well as provided technical support to Macao Customs Service. It has carried out 302 vessel maintenance projects, of which 229 projects were completed. In the examination, maintenance and repair of vehicles, the Shipyard carried out 2,151 projects involving 2,694 vehicles.

Civil Aviation

Civil Aviation Authority

The Civil Aviation Authority was founded on 4 February 1991, in accordance with Decree-Law No. 10/91/M dated 4 February 1991. It is constituted as a public institution under the Secretariat for Transport and Public Works, and it enjoys autonomy over administration, finances and property. It is responsible for directing, controlling and monitoring all civil aviation activities in Macao, and the operations of all aircraft registered in Macao.

Aviation Service

To implement its “Open Skies” policy, the Government has adopted a series of measures to enhance Macao’s civil aviation infrastructure network. Every effort has been made to attract additional investment from domestic and foreign airlines, to promote the use of Macau International Airport, and to enhance the development of passenger and cargo transportation.

To increase cooperation with the international aviation community, the Government will continue to forge new air services agreements with countries around the world. By 31 December 2012, Macao had initialled air services agreements with 47 nations and regions, among which 40 had been officially signed.

Signatories of Air Services Agreements with Macao

Nation	Signing date
Brazil	15/07/1994
Finland	09/09/1994
Austria	04/11/1994
Belgium	16/11/1994
The Netherlands	16/11/1994

(Cont.)

Signatories of Air Services Agreements with Macao	
Nation	Signing date
Luxembourg	14/12/1994
New Zealand	09/03/1995
Portugal	31/08/1995
Switzerland	05/09/1995
Singapore	27/10/1995
Malaysia	31/10/1995
Thailand	01/11/1995
United States	03/07/1996
Vietnam	07/08/1996
Germany	05/09/1996
DPR Korea	08/12/1996
Denmark	11/12/1996
Sweden	11/12/1996
Norway	11/12/1996
South Korea	03/04/1997
The Philippines	18/07/1997
India	11/02/1998
Nepal	19/02/1998
South Africa	04/04/1998
Brunei	24/05/1998
United Arab Emirates	06/12/1998
Russia	21/01/1999
Myanmar	12/03/1999

(Cont.)

Signatories of Air Services Agreements with Macao	
Nation	Signing date
Australia	24/08/1999
Poland	22/10/1999
Pakistan	15/11/2000
Czech Republic	25/09/2001
Cambodia	12/12/2001
United Kingdom	19/01/2004
Iceland	13/07/2004
Maldives	16/01/2006
France	23/05/2006
Sri Lanka	08/06/2006
Mongolia	27/06/2006
Japan	10/02/2010
Laos	Initialled
Oman	Initialled
Indonesia	Initialled
Israel	Initialled
Greece	Initialled
Slovakia	Initialled
Cape Verde	Initialled

As at 31 December 2012, four airlines were registered in Macao and providing flight services: Air Macau, East Asia Airlines, JetAsia and Macau Jet International.

Below are details of the fleets and routes that they operated:

Airline	Fleet	Destinations
Air Macau	5 x Airbus A319, 2 x Airbus A320, 7 x Airbus A321,	Shanghai (Pudong, Hongqiao), Beijing, Hangzhou, Xiamen, Nanjing, Chengdu, Nanning, Hefei, Chongqing, Taiyuan, Changsha, Ningbo, Taipei, Kaohsiung, Bangkok, Singapore, Seoul, Tokyo, Osaka
East Asia Airlines (Helicopter service)	3 x Agusta AW139	Hong Kong, Shenzhen
JetAsia (Commercial charter flight services)	2 x Challenger CL600-2B16, 2 x Hawker 900XP, 4 x Hawker 750	Global destinations
Macau Jet International (Commercial Charter Services)	1 x Falcon 2000LX 1 x Falcon 2000	Global destinations

The numbers of pilots licensed by the Civil Aviation Authority, as at 31 December 2012, were:

Airline	Number of licensed pilots
Civil Aviation Authority	2
Air Macau	157
East Asia Airlines	28
JetAsia	6
Macau Jet International (Commercial Charter Services)	7
Total	200

Macau International Airport is located at the eastern end of Taipa island and neighbouring waters. The terminal building was constructed on a rock-cut platform at Ponta da Cabrita, while the apron was built on reclaimed land. East of the apron, the air-traffic control building, control tower and ancillary fire station are on Kia Kiong Islet. The runway is on an artificial island linked to the apron by two taxiway bridges.

The main fire station is on the runway island, next to the oblique taxiway. The airport is within easy reach of the Macao peninsula, the Outer Harbour and Zhuhai via motorway, the Friendship Bridge and the Lotus Flower Bridge. Commuting time from each of these points is less than 20 minutes.

The Macau International Airport handled 4,491,065 passengers during 2012, a rise of 11 percent on the 2011 figure. Its cargo volume was 27,794 tonnes, a decrease of 29.7 percent. A total of 41,997 flights took off or landed, an increase of 7.8 percent.

Private and commercial air charters saw a steady rise in the number of flights, from 1,010 in 2011 to 1,209 flights in 2012, an increase of 19.7 percent.

Air Traffic Control

Since it opened in 1995, the airport's air traffic control system has maintained excellent standards of service efficiency and flight safety. Air traffic control facilities include secondary surveillance radar and the Automatic Terminal System. Telecommunications facilities include AMHS and satellite ground stations, while air-ground communications facilities include a UHF radio station.

Macao's air traffic zone is classified as Category-C under International Civil Aviation Organization (ICAO) standards. The keyhole-shaped air traffic zone is centred on Macau International Airport. It extends up to an altitude of 3,000 feet and a radius of five nautical miles. The western boundary is a straight line parallel to and three nautical miles from the runway. To the south, the zone forms a rectangle five nautical miles wide and extending southwards for 10 nautical miles.

Macao's air traffic zone lies between the Hong Kong and Guangzhou flight information zones. All aircraft, including helicopters entering Macao airspace, are supervised by the airport control tower. Arriving and departing aircraft can land or take off from both the southern and northern approaches. The mainland authorities control air traffic to the north of Macao's air zone, while traffic to the south is controlled by the Civil Aviation Department of Hong Kong. Since traffic in the Pearl River Delta airspace is busy and complex, the air-traffic control authorities of Macao, the mainland and Hong Kong must work closely together to ensure the safety and efficiency of air traffic in Macao and the neighbouring air zone.

Aircraft Noise

Macau International Airport was constructed offshore and far from residential communities, avoiding the need to install soundproofing. However, to protect Zhuhai from noise pollution caused by northbound flights taking off from the runway, aircraft are not allowed to pass the 230-degree radial line of Zhuhai's Jiuzhou omni-directional beacon station.

Security at Macau International Airport

Under Decree-Law No. 36/94/M issued on 18 July 1994 and ICAO regulations, the security systems at Macau International Airport are intended to ensure the safety, normal operations and efficiency of international civil aviation activities at the airport. Security measures and procedures are essential to protect passengers, crew, airport staff and the public, as well as ensuring the normal, uninterrupted

operations of aircraft, facilities and equipment.

Responsibility for airport security is distributed among the Civil Aviation Authority, the Unitary Police Service, the Macao Customs Service, the Public Security Police, the Judiciary Police, the Fire Service, the Marine and Water Bureau, the airport itself, Companhia de Seguranca de Macau Lda (SEMAC), the private airport security company, aviation companies and other airport departments.

The private airport security company is responsible for implementing the security measures and procedures formulated by the airport operator, and ensuring that the security measures and procedures comply with the International Civil Aviation Organization (ICAO) standards and recommendations. Besides, the company provides professional training, certified technicians and advanced security equipment to perform security checks on passengers, baggage and cargo.

Macau International Airport Company

Macau International Airport Company (CAM) has been appointed by the Government to operate Macau International Airport. It was responsible for the airport's construction, and it is now responsible for its operation. The Government has approved the company's application in 2001 to extend the period of its franchise by a further 25 years to 2039.



Public bus services

Public bus services in Macao have been operating since last century. A new bus service model was launched on 1 August 2011. The number of bus operators increased from two to three.



