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TRANSPORT



Roads and Bridges

Macao has 325.3 kilometres of roads and highways, including 188 kilometres on the Macao peninsula, 84.7 kilometres on Taipa Island and Cotai, 42.7 kilometres on Coloane, and 4.6 kilometres in the the University of Macau.

Three bridges and a strip of reclaimed land link the Macao peninsula with Taipa island and Coloane island. 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 427.5 kilometres of roads for motor vehicles. This figure includes 201.7 kilometres on the Macao peninsula, 140.3 kilometres on Taipa island and Cotai, 64.3 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. There are also 14 kilometres of roads of the University of Macau.

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

Public bus service in Macao is currently operated by three bus companies: Transportes Urbanos de Macau, S.A.R.L. (Transmac), Sociedade de Transportes Colectivos de Macau, S.A. (TCM), and Macau New Era Public Bus Company Limited (New Era).

At the end of 2017, there were 897 buses in service, including 231 minibuses, 140 medium-sized buses and 526 large buses, on 82 routes. In 2017, a total of 210,839,586 passengers were served, an increase of 3.45 percent over the 2016 figure, covering a total distance of 48.05 million kilometres, an increase of 16.46 percent over the 2016 figure.

The Government has entered into a seven-year contract with Transmac and TCM for the provision of mass road passenger transport in Macao. New Era took over the operation of bus routes originally provided by Reolian Public Transport, based on public concession rules, for a period of three years. The Government renewed the contract with New Era with a short-term renewal in July 2017. The period of contracts of the three bus companies became the same.

Sociedade de Transportes Colectivos de Macau, S.A.

Sociedade de Transportes Colectivos de Macau, S.A. (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. Currently, TCM has a fleet of 178 buses and operates 20 bus routes on the Macao peninsula and connecting the peninsula and the outlying islands. In 2017, it carried over 3.90 million passengers and covered 10 million kilometres.

Transportes Urbanos de Macau, S.A.R.L. (Transmac)

Transportes Urbanos de Macau, S.A.R.L. (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 1,000 employees and a fleet of 412 air-conditioned buses that serve 30 bus routes covering Macao, Taipa and Coloane islands. During 2017, about 93 million passengers were carried and 21.8 million kilometres covered.

Macao New Era Public Bus Company Limited

Macao New Era Public Bus Company Limited (New Era) officially started operating public transportation services from 1 July 2014, taking over the assets and routes previously operated by Reolian Public Transport.

New Era was co-founded by TCM, Nam Kwong Industry Limited and Macau Auto Integrated Service Holdings Limited.

New Era currently has a fleet of 320 air-conditioned buses, including 25 12-metre natural gas buses which came into service for the first time. It has a team of more than 700 employees serving 34 bus routes covering Macao, Taipa, Coloane and Hengqin. About 220,000 passengers were carried per day and the buses ran about 47,000km per day.

Taxis

At the end of 2017, Macao had 1,491 licensed black taxis and 91 special taxis. There were 17,589 licensed taxi drivers.

Traffic Management

Transport Bureau

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

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

Vehicle Statistics

At the end of 2017, there were 241,764 vehicles on Macao's roads, including 126,274 motorcycles, 107,403 light vehicles and 8,087 heavy vehicles. During the year, 16,813 new vehicles were registered, 20.32 percent more than in 2016. Of these, 10,860 were motorcycles and 5,583 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.

The system includes 48 video cameras and four speed monitoring systems on the Friendship Bridge and surroundings, 112 video cameras and 21 speed monitoring systems on the Sai Van Bridge and surroundings, and 14 video cameras and four speed monitoring systems on the Ponte Governador Nobre de Carvalho and surroundings. Also, 502 video cameras, 65 speed monitoring radar units, and a total of 62 cameras for monitoring vehicles jumping red lights and 19 illegal parking detecting systems have been installed in various downtown locations.

According to the Public Security Police, during 2017, the monitoring systems identified 11,628 cases of highway speeding, 1,062 cases of bridge speeding, 1,190 cases of jumping red lights, and 31,827 cases of illegal parking identified by the illegal parking monitoring systems.

Parking

As at 31 December 2017, Macao had 45 public car parks, which together provide 15,303 parking spaces for light vehicles, 487 spaces for heavy vehicles, and 11,795 spaces for motorcycles.

Public Car Parks in Macao	
Name of car park	Available parking spaces
Pak Lane Car Park	507 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	411 light vehicles, 300 motorcycles
Pak Vai Car Park	502 light vehicles
Pak Kai Car Park	208 light vehicles
Pak Wai Car Park	1,019 light vehicles

(Cont.)

Public Car Parks in Macao	
Name of car park	Available parking spaces
Pak Keng Car Park	161 light vehicles
Alameda Dr. Carlos d'Assumpcao Car Park	720 light vehicles
Pak Wu Car Park	644 light vehicles, 196 motorcycles
Pak Kong Car Park	287 light vehicles, 35 heavy vehicles
Sewage Treatment Plant Car Park	276 light vehicles, 452 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, 580 motorcycles
Ho Yin Garden Car Park	415 light vehicles, 542 motorcycles
Malaca Street Car Park	215 light vehicles, 563 motorcycles
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
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
Edificio do Lago Car Park	678 light vehicles, 1,132 motorcycles
Edificio Koi Nga Public Car Park	307 light vehicles, 366 motorcycles
Edificio Ip Heng Public Car Park	389 light vehicles, 606 motorcycles
Edificio Cheng Chong Public Car Park	244 light vehicles, 386 motorcycles
Edificio Lok Kuan Public Car Park	362 light vehicles, 550 motorcycles
Rua da Ponte Negra Public Car Park	95 light vehicles, 80 motorcycles
Fai Yat Building Public Car Park	259 light vehicles, 228 motorcycles

(Cont.)

Public Car Parks in Macao	
Name of car park	Available parking spaces
Cheng Chun Building Car Park	54 light vehicles, 38 motorcycles
Cheng I Building Car Park	283 light vehicles, 286 motorcycles
Iat Seng Building Car Park	292 light vehicles, 315 motorcycles
Chun Shu Mei Car Park	197 light vehicles, 197 motorcycles
Vala Das Borboletas Car Park	369 light vehicles, 165 motorcycles
Edificio Iat Fai Car Park	59 light vehicles, 132 motorcycles

As at 31 December 2017, there were 8,971 parking meters for light vehicles, of which 154 were one-hour parking meters, 7,958 were two-hour parking meters, 238 were four-hour parking meters and 621 were five-hour parking meters. There were 2,289 non-metered parking spaces. There were 2,569 parking meters for motorcycles, of which 2,098 were two-hour parking meters, 361 were four-hour parking meters and 110 were five-hour parking meters. There were 36,384 non-metered parking spaces.

Road Safety

The Road Safety promotional campaign was held in 2017, and was 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 publicised 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 2017, a total of 88 schools and organisations participated in the road safety seminars and workshops co-organised by the Transport Bureau and Traffic Department with 15,073 participants.

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).

From 18 December 2014, the operating hours of the Border Gate checkpoint was extended from 6 am to 1 am for passenger crossings; the Lotus Flower Bridge Checkpoint between Cotai

and Hengqin implemented 24-hour services, but the opening hours for goods vehicles remain unchanged from 8 am to 8 pm. The Zhuhai-Macao Crossborder Industrial Zone Checkpoint opens only to pedestrian traffic from midnight to 7 am for non-local workers, students and Macao residents, closing to vehicular traffic.

During 2017, there were 18,629,788 visitor arrivals by land, an increase of 4.9 percent over the previous year's figure. Of these, 16,098,629 entered via the Border Gate; tourists from mainland China and Hong Kong represented 88.3 percent and 7.8 percent of the total, respectively. The number of visitors who arrived via the Cotai checkpoint was 2,515,217. During the year, there were 24,301,441 arrivals of Macao residents via the Border Gate, with 829,256 via the Cotai checkpoint.

Cross-Border Marine Transportation Services

The Outer Harbour Ferry Terminal and Taipa Ferry Terminal provide cross-border transportation services for passengers travelling between Macao and Hong Kong and mainland China. Scheduled passenger ferries to Hong Kong and mainland China are operated by Shun Tak China Travel-Companhia de Gestao de Embarcacoes (Macao), Limitada; 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, which commenced operations in 1993, is one of Macao's most important checkpoints. The terminal operates around-the-clock providing maritime passenger transportation services between Macao and various places including Sheung Wan, Tuen Mun, Tsim Sha Tsui and Hong Kong International Airport in Hong Kong, and Fuyong and Shekou in Shenzhen. Moreover, it also provides helicopter transportation services between Macao and Hong Kong or Shenzhen.

The total floor area of the terminal is 65,000 square metres. It has two vertical piers providing 14 berths for a total of 14 passenger vessels at one time, with a helicopter pad on its rooftop. The main building is a three-storey building, with the first floor as arrival floor, the second as departure floor and the third as food and beverage, shopping and passenger waiting area.

Taipa Ferry Terminal

It is planned that Taipa Ferry Terminal commenced operation on 1 June 2017. It occupies 134,000 square metres, with 16 berths for ferries, three multi-functional berths and a helicopter pad on its rooftop. The Terminal provides maritime passenger transportation services between Macao and various places including Sheung Wan, Tsim Sha Tsui, Tuen Mun and Hong Kong International Airport in Hong Kong, Fuyong and Shekou in Shenzhen, and Jiangmen.

Inner Harbour Ferry Terminal

The Inner Harbour Ferry Terminal has one berth, which provided maritime passenger transportation services between Macao and Wanzai in Zhuhai. The ferry usually operates from 9am to 6pm.

The total floor area of the terminal is 1,450 square metres. The main building is a three-storey building; the first floor served as arrival floor, the second as departure floor.

The Inner Harbour Ferry Terminal ceased maritime passenger transportation services on 17 January 2016.

Maritime Passenger and Cargo Transportation

During 2017, there were 113,378 scheduled ferry sailings between Macao and Hong Kong, and 25,508 scheduled ferry sailings between Macao and mainland China.

During 2017, 11,249,113 passengers arrived in Macao by sea, an increase of 4.41 percent compared with the 2016 figure. Of these, 6,901,982 entered Macao via the Outer Harbour Ferry Terminal, and 4,347,131 via the Taipa Temporary Ferry Terminal.

In 2017, 90,195 containers or 129,798 TEUs (twenty-foot equivalent units) were shipped in and out of Macao by sea, representing increases of 1.35 percent and 0.29 percent, respectively, on the 2016 figures.

Cross-Border Helicopter Services

Helicopters are the most convenient way to travel between Macao and Hong Kong and between Macao and Shenzhen. A Hong Kong-Macao helicopter passenger transportation service was inaugurated in 1990. A Shenzhen-Macao helicopter service has 40 and six daily helicopter flights between Macao and Hong Kong and between Macao and Shenzhen, respectively. The helicopter service operates from 10 am to 11 pm. In 2017, there were 12,744 helicopter flights, representing an increase of 9.3 percent over 2016.

Ports

Outer Harbour

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

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 Marine and Water Bureau. The South Sampan Pier between Piers 8 and 9 is used by crewmembers of ships berthed in the Inner Harbour who hold Macao SAR Resident Identity Cards, or Portuguese Citizen Cards, or are authorised to land and depart by the relevant government authority. The South Sampan Pier also allows vessels travelling to and from Wanzai, Zhuhai, to berth; these carry flowers and flower farmers, and arrivals are processed through a customs inspection point. The North Sampan Pier between Inner Harbour Ponte 16 and Pier 21 is used by crewmembers of

ships berthed in the Inner Harbour who hold Macao SAR Resident Identity Cards, or Portuguese Citizen Cards, or who are authorised to land and depart by the relevant government authority, with prior notice to the Macao Customs inspection point. The Inner Harbour's approach channel is 60 metres wide, and its fairway is 55 metres wide and 3.5 metres deep.

Taipa

The Taipa Ferry Terminal is situated on the north-eastern tip of Taipa island, and is exclusively 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 2017, Ka Ho Harbour handled 18,343 inbound TEUs (twenty-foot equivalent units) and 18,104 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

According to By-law No. 14/2013 the Organisation and Operation of the Marine and Water Bureau renewed by By-law No. 23/2015, the Marine and Water Bureau is a department with authorities and duties responsible for exercising maritime authority, promoting the development of maritime activities, and coordinating water resources management and water supply.

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 Fisheries Development and Support Fund started to receive applications on 30 April 2007. The loans approved by the end of 2017 totalled around 65.88 million patacas.

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 conformity with official requirements concerning technology, safety and environmental protection. Maritime registration is a prerequisite for vessels seeking commercial registration. There were 315 registered vessels at the end of 2017, including three 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 99 registered vessels in this category at the end of 2017, including seven 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 Marine and Water Bureau beforehand. At the end of 2017 a total of 118 people held seafarer's books issued by the Marine and Water Bureau.

Government Dockyard

The Government Dockyard 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 Government Dockyard belong to the Marine and Water Bureau and Macao Customs Service.

In 2017, the Government Dockyard built six new vessels – a 25-metre rescue ship, two 16-metre steamboats, one 17-metre hydrographic vessel and two 19-metre tugboats for the Marine and Water Bureau. It also carried out 388 vessel maintenance projects, 237 of which were completed. The shipyard carried out 2,103 projects concerning examination, maintenance and repair of 2,426 vessels.

Safety of Water Supply

To ensure the safety of water supplies in Macao and effectively manage water resources, the Maritime Administration was renamed the Marine and Water Bureau on 28 July 2013, and established the Water Resources Department for coordinating supplies of drinking water, recycled water and raw water; studying and establishing water resources management policy, system, and measures; and promoting development and reasonable utilisation of water resources. The Marine and Water Bureau also cooperated with various sectors to build a water-saving city

through development and application of water technologies, and publication and promotion of water-saving activities.

The bureau also regularly monitors the quality and quantity of raw water supplied to Macao, to ensure the quality in Macao meets the safety standard. The bureau also monitors the operations of the public water supply services company.

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 2017, Macao had initialled air services agreements with 49 nations and regions, 41 of which 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
Luxembourg	14/12/1994
New Zealand	09/03/1995
Portugal	31/08/1995
Switzerland	05/09/1995
Singapore	27/10/1995

(Cont.)

Signatories of Air Services Agreements with Macao	
Nation	Signing date
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
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	25/06/2013
Oman	Initialled
Indonesia	Initialled

(Cont.)

Signatories of Air Services Agreements with Macao	
Nation	Signing date
Israel	Initialled
Greece	Initialled
Slovakia	Initialled
Cape Verde	Initialled
Chile	Initialled
Turkey	Initialled

As at 31 December 2017, three airlines were registered in Macao and providing flight services: Air Macau, Sky Shuttle and Macau Jet International.

Airline	Fleet	Destinations
Air Macau	4 x Airbus A319, 3 x Airbus A320, 10 x Airbus A321	Shanghai (Pudong, Hongqiao), Beijing, Hangzhou, Xiamen, Nanjing, Ningbo, Chengdu, Nanning, Hefei, Chongqing, Taiyuan, Tianjin, Zhengzhou, Guiyang, Changzhou, Taipei, Kaohsiung, Bangkok, Da Nang, Hanoi, Seoul, Jeju, Tokyo, Osaka, Fukuoka, Da Nang, and Hanoi.
Sky Shuttle (Helicopter service)	3 x Agusta AW139	Hong Kong, Shenzhen
Macau Jet International (Commercial Charter Services)	1 x Falcon 2000LX 1 x Agusta AW139	Global destinations

The numbers of pilots licensed by the Civil Aviation Authority, as at 31 December 2017, were:

Airline	Number of licensed pilots
Civil Aviation Authority	1
Air Macau	174

(Cont.)

Airline	Number of licensed pilots
Sky Shuttle	22
Macau Jet International (Commercial Charter Services)	11
Total	208

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 7,165,803 passengers during 2017, 8.1 percent more than in 2016. Its cargo volume was 37,499 tonnes, representing an increase of 14 percent. A total of 58,520 flights took off or landed, representing an increase of 2.8 percent.

The number of private and commercial air charters increased from 2,656 in 2016 to 2,938 in 2017, representing an increase of 11 percent.

During 2017, 2,731,605 visitors arrived via the airport.

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, ground radar and the Automatic Terminal System. Telecommunications facilities include AMHS, while air-ground communications facilities include a UHF radio station, and navigation facilities include a Doppler VHF omnidirectional radio range (DVOR) apparatus and Instrument Landing System.

The zone with Macao's air traffic control service 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 China 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, mainland China and Hong Kong must work closely to ensure the safety and efficiency of air traffic in Macao and the neighbouring air zones.

Aircraft Noise

Macao 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 231-degree radial line of Zhuhai's Jiuzhou omni-directional beacon station.

Aviation Security

Under Decree-Law No. 36/94/M issued on 18 July 1994 and ICAO regulations, the security systems of civil aviation are intended to ensure the safety, normal operations and efficiency of international civil aviation activities in Macao. 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 Macao civil aviation security is distributed among the Civil Aviation Authority, the Unitary Police Service, the Macao Customs Service, the Public Security Police, the Judiciary Police, the Marine and Water Bureau, the Macao International Airport, the SEMAC Security Company employed by the Airport, aviation companies and other airport departments.

The 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 security requirements of aviation in Macao and 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.

Macao International Airport Company

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



NEW TAIPA FERRY TERMINAL







The new Taipa Ferry Terminal commenced operation on 1 June 2017. With an area of 200,000 square metres, the terminal has 16 berths for high-speed ferries and three multi-functional berths, as well as 127 immigration channels and two baggage carousels. It also has 1,000 parking spaces, and a helicopter pad on its rooftop that can accommodate five helicopters.

The terminal operates around the clock, to provide maritime passenger transportation services and air-sea transport services between Macao and various places, including Sheung Wan, Kowloon, Tuen Mun, and Hong Kong International Airport in Hong Kong; as well as Fuyong and Shekou in Shenzhen.

Maritime passenger transportation has always been the backbone of Macao's external transportation. In the past five years, about 120 million passengers entered or departed Macao via the seaport. The new Taipa Ferry Terminal meets the growing demand for marine transportation following the development of Cotai, while also relieving pressure on the Outer Harbour Ferry Terminal.

(Photos by Marine and Water Bureau)

