A SHORT HISTORY OF TRANSPORT IN JAPAN

FROM ANCIENT TIMES TO THE PRESENT

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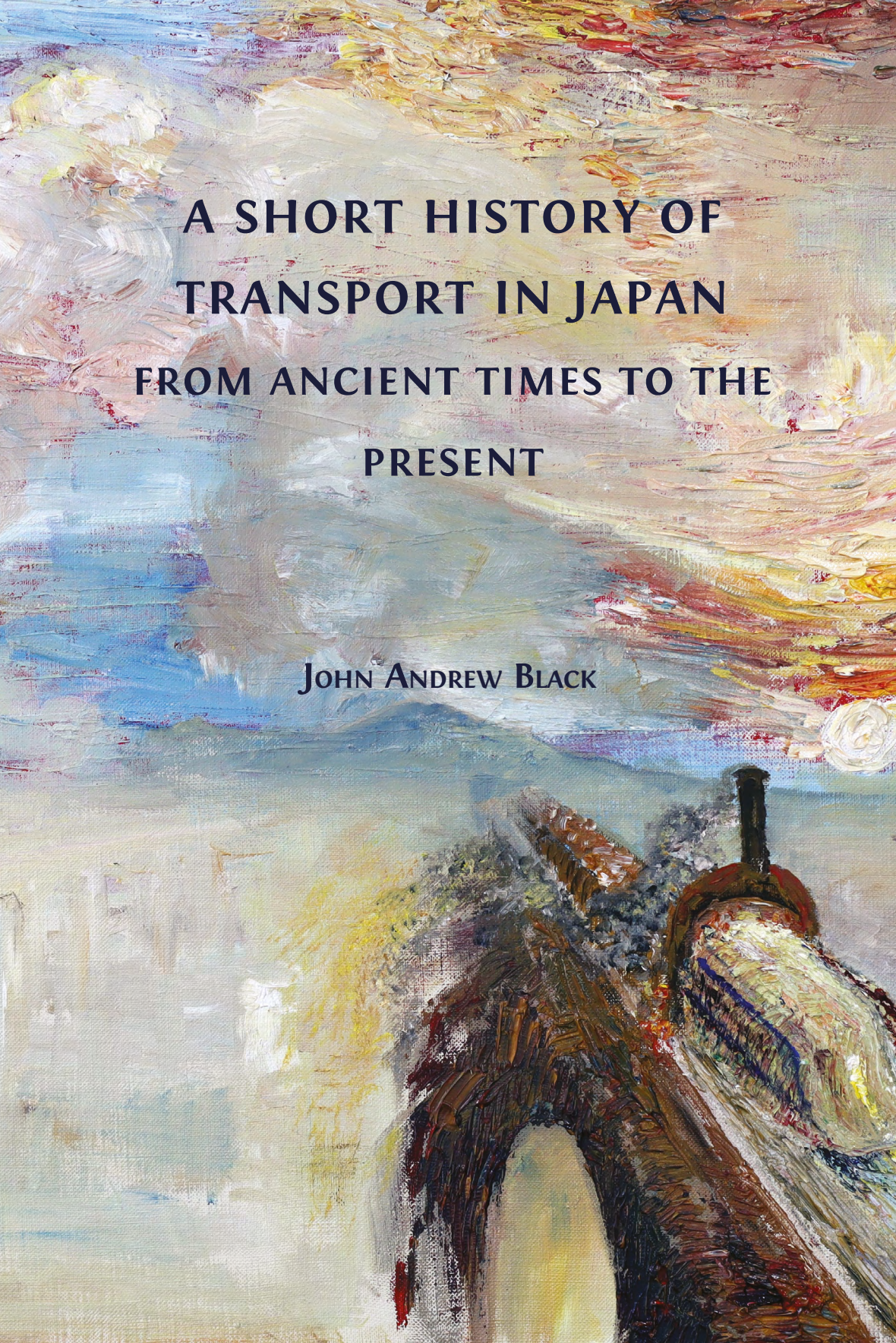

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7. Civil Aviation and Airports

The Japanese people appear to be quite as air-minded as those of any other country, and a steady development of the aviation industry is expected

Moulton with Ko, 1931

Introduction

The Japanese aviation industry dates from the late Meiji era and its early development heavily involved the military, especially in the period leading up to the Second World War. In June 1912, the navy formed The Committee for Naval Aeronautic Research (海軍航空術研究会 *Kaigun Kōkūjūtsu Kenkukai*) (Sagen, 2004: 76). By 1916, the Japanese Imperial Navy had initiated the land-based *kōkūtai* system (naval air station and the flying unit stationed there) and, by the Spring of 1918, three Maurice Farman and Curtis seaplanes flew non-stop from Yokosuka (Kanagawa Prefecture) to Sakai (Ōsaka Prefecture)—a distance of 391 km.

Japan was a signatory to the international Convention Relating to the Regulation of Aerial Navigation dated 13 October 1919. In December of that year, a Special Aeronautical Committee was set up as an advisory organ to the Ministry of War in order to study the ways and means of directing, promoting and regulating all civil aviation enterprises. This Committee drafted Japan's *Air Navigation Law* of April 1921 (Kataoka, 1936: 95). The first year of civilian flights took place in the same year. The private enterprise company, Japan Air Transport Institute, pioneered seaplane passenger services from the Ohama shore near Sakai to nearby Kizugawa Airfield, Ōsaka, and then on to Tokushima City at the eastern end of Shikōkū Island (63 km).

The Japanese Government stepped in as an airline operator when, on 30 October 1928, it established the Japan Air Transport Corporation (JAT) as the national flag carrier. JAT absorbed the Japan Air Transport

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Institute and two other small companies and began scheduled passenger services in 1929. In current prices, the national government subsidised JAT annually by about U.S. $1 billion. Its aircraft were frequently chartered (for free) by the military for missions in Asia, especially during the 1931 invasion of Manchuria. The military role in Japanese aviation history expanded during the 1930s (Peattie, 2013), but with the country's defeat in 1945 its airfields were taken over by Allied occupying forces until they were returned to Japan for civilian aviation that recommenced from 1952 onwards.

In the modern democratic period, aviation is strongly regulated by international and bilateral agreements and technical innovation through the International Civil Aviation Organisation (Cronin, 2013). This chapter will demonstrate the strong regulatory role that the Japanese Government exercises over the private-sector organisations providing civilian airline services. From 1929, the Japanese Government has also been an airline operator (JAT then JAL) until its privatisation in 1987.

In the post-war era, the national government has been the sole planner for airports, the major operator of major airports and the primary source of funds for major airport construction. Somewhat unusual is the fact that legislation allows airport terminals and associated parking to be operated by the private sector. Under private finance initiatives (PFI), the government is increasing the opportunity for the private sector to be involved with operating airports under concession agreements with the Japanese Government (Sato and Okatani, 2016: 2). All of the above themes are illustrated in detail with airports in the Chūbu, Ōsaka and Tōkyō regions and with the historical development of airline companies and airport terminal operators. We start with the early stages of Japanese aviation in the modern period.

Modern Period

The early development of aviation is closely tied to the Japanese military, especially a few individuals in the Imperial Navy who argued against the then prevailing doctrine of land-based warfare (Sagen, 2004). In 1903, Lieutenant Commander Akiyama Saneyuki lectured at the Naval Staff College in Tōkyō on the advances in aviation technology. However, enthusiasts in the navy were marginalised from decision-making officers despite expressing their views in various fora. Lieutenant Commander

Yamamoto Eisuke presented a written statement on aviation to his superiors in March 1909 (in April 1927, he was appointed chief of the Naval Aviation Department). By July 1909, the army and navy jointly established The Provisional Committee for Research on Military Air Balloons (臨時軍用気球研究) and in June 1912 the navy formed The Committee for Naval Aeronautic Research (海軍航空術研究会), sending officers abroad for flight training and gathering strategic information on aviation.

Melzar (2020) argues that the successive reshaping of Japan's aviation has happened under French, British, German, and American influence with technological transfer a key element. The first experiments in naval aviation in Japan took place in early November 1912, when the Navy purchased and tested the French-manufactured Maurice Farman and Curtis float biplanes off Oppama in Yokosuka (Kanagawa Prefecture) before unveiling them at the 1912 Naval Review held off the coast at Yokohama (Suzuki and Sakai, 2005). Equipment and planes were imported from the Netherlands, the UK and the U.S.A., and planes were also produced under international licencing agreements. Japanese manufacturers developed their own planes such as the Mitsubishi shipboard attack plane Model 13 (1924) and the Kawasaki reconnaissance plane Model 88 (1928) but these were based predominantly on Western manufacturing designs.

Japanese aeronautical engineering advanced quickly and introduced distinctive innovations. In 1936, the Mitsubishi Aircraft Company produced the A5M1 shipboard fighter plan that went into service a year later and the more powerful engine A5M2 that entered service with the Imperial Navy early in 1937. This plane was highly successful in securing Japanese air supremacy over China after the outbreak of the Second Sino-Japanese. The success of this aircraft created a new awareness of the potential of strategic air power, which increased when a new fighter, the A6M2 (known as the "Zero" fighter), designed by Mitsubishi Heavy Industries in Nagoya, was accepted by the Navy in July 1940. This fighter aircraft out-performed Allied military aircraft in the early stages of the Pacific War.[1]

1 Designed by Horikoshi Jirō (1903–1982), the Zero was the first all-metal, low-wing monoplane with an enclosed cockpit produced by any world power outside of the U.S.A. or Europe. It possessed unparalleled advantages of speed, handling, manoeuvrability and an impressive range of 3,000 km. In the conflict with China

Civilian aircraft were mainly imported from the Netherlands (Fokker) and the U.S.A. (Douglas DC-2). Together with the Japanese Nakajima aircraft (Mikesh and Abe, 1990) they were deployed in the 1920s when civilian aviation started up. Data from the Japanese Department of Communications, Bureau of Aeronautics, *Manual on Aeronautics*, show that in the first year of civilian flights in 1921 civilian planes flew a total of about 50,000 km (Moulton with Ko, 1931: 89). In 1922 and 1923, three small companies—the first being the Japan Air Transport Institute—launched air transport service in Japan on a modest scale, covering limited routes between domestic cities. The inaugural service took place on 3 November 1922 with a flight off the Ohama Coast near Sakai to Tokushima City on Shikōkū Island. These private companies struggled to maintain their operations through the 1920s.

The Japanese Government was a strong supporter of commercial aviation. On 30 October 1928, in order to promote civil aviation, the Japanese Government established a national flag carrier, Japan Air Transport Corporation (JAT), which absorbed the three private airline companies and expanded services. JAT was officially controlled by the government's Ministry of Communications. It received the equivalent of U.S. $1 billion (in today's currency) from the Japanese Government during its first 11 years of operations. JAT began its first regular passenger service the following year, initially sharing the Imperial Japanese Army air base at Tachikawa (about 41 km west of Tōkyō Railway Station) as its Tōkyō terminal. The majority of the civilian flying fields were small and poorly equipped so the formation of JAT spurred the construction of Haneda Airport to serve Tōkyō.

In 1930, the Ministry of Communications purchased a 48-hectare piece of private land in the town of Haneda on Tōkyō Bay (the direct distance from Tōkyō Station is 15 km) for the purpose of constructing an airfield. Operations of the new civilian Haneda Airfield began in 1931. Through the 1930s, Haneda Airfield handled flights to and from various airfields in Japan, in Korea and in the puppet state of Manchuria. The

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in July 1940, the Zero achieved an impressive kill ratio against outdated Russian, American, and Chinese designs, although many of these were antiquated biplanes. During the latter half of 1940, the Zero gained complete air superiority for Japan, destroying 59 Chinese aircraft in the air without losing a single fighter (Warfare History Network, 2019).

military gradually took over aviation operations at Haneda Airfield: in 1939, its runway was extended to the length of 800 metres and a second runway of the same length was constructed. During the war, civilian flights in and out of Haneda became extremely rare.

In exchange for the subsidy to JAT, the government had free use of the aircraft and facilities, and, importantly, the Japanese military, especially the Japanese army, played a substantial role in its governance. Noguchi and Boynes (2012) analyse the role of the state in determining the use of budgets within Japan Air Transport (1928-1938) and Japan Airways (1938–1945). Through the decade of the 1930s, as the Japanese Empire began to expand, the military made full use of JAT's airplanes for various conflicts overseas. JAL's aircraft were used in the invasion of Manchuria but this military transport role decreased as the army and JAT helped to establish the Manchukuō Aviation Company in 1932 (a consortium of the puppet government of Manchuria, the South Manchurian Railway Company and Sumitomo *zaibatsu*), the Huitong Airways (1936)—in preparation for Japan's invasion of north China—and China Airways (1938), which later absorbed Huitong Airways (Century of Flight, n.d.).

These military imperatives allowed JAT to shift its focus to the civilian passenger market and begin using its new 14-passenger Douglas DC-2s on more commercially profitable routes between Japan and Manchuria in 1936. JAT benefitted from a resurgence in military passenger traffic with the start of the Second Sino-Japanese War of 1937. In 1938, JAT carried nearly 70,000 passengers, representing 2.6 per cent of the world's passenger traffic (Century of Flight, n.d.). The same year, Kizugawa Airport in Ōsaka handled 8,800 departures and arrivals and 10,000 passengers (equivalent of a mean passenger occupancy per aircraft of 1.14).

At the end of the year, the Japanese Government established a new airline, Greater Japan Airways (GJA), as a monopoly business for all civil aviation when JAT was merged into the new company. GJA was originally an independent private company when the Japanese Government bought out half of the company's net worth. GJA was primarily an international operator, and it used a combination of foreign and domestic aircraft for its services. These planes included the eight-passenger Nakajima AT-2 airliner, the 11-passenger Mitsubishi MC-20 transport aircraft, and the domestically built version of the 21-passenger

seat Douglas DC-3. The Japanese had signed a licensing agreement with the Douglas Company in February 1938 to build domestic versions of the DC-3.

The beginning of the war in the Pacific in December 1941 substantially affected Japanese commercial aviation. One month after the start of hostilities, the Japanese Government suspended all commercial operations of GJA. Instead, the airline's services were completely geared to support the military's operations in the Pacific. Japanese airfields were heavily bombed by Allied forces, and, with the occupation of Japan, its airfields were under the control of Allied air commands that lasted until the end of the Korean War. Civilian air services in Japan did not resume until 1952.

Modern Democratic Period

With the defeat of Japan in 1945, Allied forces occupied many airfields. Japan was prohibited from producing or using airplanes, and all facilities for the manufacture of aircraft and for aeronautical research were either dismantled or converted to other purposes. This directive by the Allied Occupying Forces lasted until April 1952 when Japanese civil aviation activities resumed following the conclusion of the San Francisco Peace Treaty (Kodansha, 1993: 86).

The modern commercial aviation industry in Japan, as we understand it today,[2] emerged after the end of the Pacific War with the resumption of international and domestic flights. The industry is highly regulated internally, and greatly influenced both by bilateral agreements on international air services (the first with the U.S.A. in 1952, then the

2 The key policies of the Japanese Government in the 21st century have been: "Basic Policy on Economic and Fiscal Management and Structural Reform 2002" approved by Cabinet on 25 June 2002; report of the Aviation Subcommittee of the Transportation Policy Council (21 June 2007) "Measures for Future Development and Operation of Airports and Aviation Security Facilities—A Strategic New Aviation Policy Vision"; Cabinet decision on Asia Gateway Concept "Basic Policy for Economic and Fiscal Management 2007" approved on 19 June 2007; review of legal system related to airport maintenance and operation (promulgation of law on 18 June 2008, partial enforcement); Ministry of Land, Infrastructure, Transport and Tourism growth strategy (17 May 2010) formulated six strategies in the aviation field and approved by Cabinet on 18 June 2010 as "New Growth Strategy"; and Cabinet decision on Japan Revitalization Strategy (31 July 2012 (Civil Aviation Bureau, Ministry of Land, Infrastructure, Transport and Tourism, 2012).

United Kingdom, and now there are agreements with 55 countries and one region) and by the International Civil Aviation Organisation (ICAO), established in 1947 in Montreal, Canada, whose core function is to research new air transport policy and standardised innovations (https://www.icao.int/about-icao/Pages/default.aspx).

Nowadays, in Japan, air carriers are predominantly private-sector organisations, airports are operated primarily by national and local governments (with a few major airport hubs now operated on concessions from the government), terminals and parking are contested by both sectors and aviation policy is formulated by the Ministry of Land, Infrastructure, Transport and Tourism. Air traffic control is a government function provided by the Air Traffic Services System within the Civil Aviation Bureau of the Ministry of Land, Infrastructure, Transport and Tourism.

Government Airlines and Private-Sector Airlines

When civilian air transport resumed, Japan Air Lines (JAL) was established in 1953 as a major private company to service domestic and international markets. In order to foster the company as a national flag carrier, a new bill in the *Diet* was passed to make JAL a special corporation. The government invested in JAL the equivalent of the value of the capital stock that the company originally sold in starting its business (Yamauchi and Ito, 1996, footnote 1, p. 4; Ito and Yamauchi, 1996). Around the same time, several small private airline companies were founded, but the domestic market was in its early stage of development and their business conditions were unstable with bankruptcies and consolidations occurring.

By 1957, All Nippon Airways (ANA) had become the second major airline. The remaining private companies underwent various consolidations, and by the mid-1960s, there were four airline companies operating in Japan: JAL; ANA; Japan Domestic Airlines (JDA); and Toa Airways (TA). In the second half of the 1960s, TA formed cooperative arrangements with ANA, whilst JDA associated with JAL. This flagged possible company mergers but the buoyant passenger demand lead to TA and JDA merging with each other in 1971 to form Toa Domestic Airlines—later the Japan Air System (JAS).

The Japanese Government kept a watchful eye on these business practices. A Cabinet Meeting Resolution of 1970 "Concerning Airline Operations" approved a restructuring of the airline industry. The reform resulted in a change from a two-company (JAL and ANA) regime to a three-company (JAL, ANA, JAS) regime. There were specific rules ("The Aviation Constitution") issued in 1972 that segmented the industry into different markets. JAL would service international routes and domestic trunk routes; ANA would serve domestic trunk and local routes plus short-distance international charter flights; and JAS would serve local routes and a portion of domestic trunk routes. JAL and JAS merged in 2002. A new carrier could enter the international air cargo market if threshold demand was established. Strict economic rules to all aspects of the Japanese airline industry were introduced where the three main airlines were required to follow the Ministry of Transport's (MOT's) 'administrative guidelines' as to their business plans and domestic and international routes flown.

In the 1970s, the annual growth rate of revenue-passenger kilometres in the domestic markets was 12.2 per cent, and, in international markets, the figure was an astounding 42.4 per cent when airline networks expanded (Yamauchi and Ito, 1996: 4). However, the aviation sector of any domestic economy cannot be isolated from international market trends and the deregulation of the United States airline industry that occurred in 1978 (Williams, 2017; Miyoshi, 2015; and Sinha, 2019) proved an important external influence on Japanese government policy. Subsequent quantitative analyses demonstrated the success of deregulation to consumers in Japan (Kanda *et al.*, 2006) although this claim of success is disputed by Ito (2007).

In September 1985, the Minister of Transport consulted the Council for Transport Policy (an official advisory committee to the Minister) about the future of airline services in Japan. Their reports advocated for greater competition in both domestic and international markets: (1) international routes would be served by multiple carriers; (2) competition on domestic routes would be promoted by new entry into particular city pair markets; and (3) JAL would be completely privatised (the government held a 34.7 per cent equity share when it was privatised in November 1987). Interestingly, the Council for Transport Policy Report argued that "an American style of deregulation does not suit circumstances in Japan" because of the capacity limitations of

Tōkyō International (Haneda) Airport and Ōsaka International (Itami) Airport, and because of the different competitive strengths of the airlines (Yamauchi and Ito, 1996: 6–7).

This partial deregulation enabled the three carriers to make their own decisions on matters such as capacity increases, introduction of new types of fares and routes to fly. The *Civil Aeronautics Law* was revised at the end of 1994 to relax the conditions for introducing and setting discount fares in domestic markets. In 1995, JAL introduced a new discount fare which was 25 to 35 per cent lower than the regular fare, with restrictions similar to the U.S. discount ticketing system. Another example was in 2000, when, to compete with high-speed rail, JAL, ANA, and JAS introduced the 'shuttle' service in the Tōkyō—Ōsaka (Itami) market to standardise the airfare, make the tickets interchangeable amongst the three companies and speed up the boarding process (Ito, 2007: 5–7).

In 1997, the Japanese Government further deregulated the business by allowing new entrants into the domestic market. In 1998, Skymark started operations on the second busiest domestic route—Haneda (Tōkyō) to Fukuoka—and Air Do started flying between Haneda and Sapporo (Hokkaidō) on the busiest domestic route. Described as "no frills" airlines with cheaper fares, Skymark and Air Do were the first new entrants since JAS began operations in 1945. By 2021, there were eight domestic and international carriers (Table 20), two cargo carriers (ANA Cargo and Nippon Cargo Airlines, owned by Nippon Yuson) and 14 domestic airlines that commenced operations between 1983 and 2010.

The list of Japanese domestic airlines and their commencement date are as follows: Air Do (1998); Amakusa Airlines (2000); All Nippon Airways Wings (2010); Fuji Dream Airlines (2009); Hokkaido Air System (1998); Ibex Airlines (2004); Japan Transocean Air (1993); New Central Airlines (1978); New Japan Aviation (2011); Oriental Airbridge (2001); Ryukyu Air Commuter (1985); and Solaseed Air (2011). Their ownership structure is varied reflecting ANA and JAL support of regional airlines, local government and business interest in investing in air transport, corporate investors and the encouragement of ordinary investors.

For example, Air Do started up with 26 shareholders, owners of small- and medium-sized Hokkaidō-based companies, plus professional individuals. The main shareholders are now Kyoto Ceramics, Reikei Co.,

Tokyo Marine and Fire Insurance and Hokkaido Electric. The company made a direct appeal to the citizens of Hokkaidō to support Air Do and bring more affordable fares to the region. Some 7,000 shares were sold at 50,000 yen each (U.S. $450)—mostly on a one share per person basis that has created a useful market of loyal passengers (Aviation Strategy, 1999: 14). However, the airline has had a checked history with bankruptcy and periodic restructuring (Ito, 2007).

Table 20. Ownership of Japanese Domestic and International Airlines.
Source: Author based on Airline Company Websites.

Airline Company	Commenced Operations	Ownership
All Nippon Airways (ANA)	1952	ANA Holdings
Japan Airlines (JAL)	1951	Japan Airlines Co., Ltd.
Jetstar Japan (JJP)	2012	Qantas (33.3%), JAL (33.3%), Mitsubishi Corporation (16.7%) & Century Tokyo Leasing Corporation (16.7%)
Peach Aviation (APJ)	2011	ANA, FEIG, and the Innovation Network Corporation of Japan
Skymark Airlines (SKY)	1998	Low-cost carrier Integral Corporation (50.1%), with minority investments from ANA (16.5%), Sumitomo Mitsui Banking Corporation and the Development Bank of Japan (33.4%)
Spring Airlines Japan (SJO)	2014	Low-cost carrier owned by Spring Airlines, China (33%) and various Japanese investors.
StarFlyer (SFJ)	2006	ANA (19.0%) stake, and TOTO, Yasakawa Electric Corporation, Kyushu Electric Power Company and Nissan Motor Company
ZIPAIR Tokyo (TZT)	2020*	Subsidiary of JAL

* Due to Covid-19 passenger services have been delayed but cargo flights to Bangkok commenced in June 2020

Amongst these regional airline companies, the ownership patterns are diverse. J-Air is a wholly owned subsidiary of JAL, whereas Ibex Airlines is a regional airline with a collaborative arrangement with ANA. Solaseed Air's major shareholders are the Development Bank of Japan (22.4 per cent), Miyazaki Kotsu Co., Ltd. (17.0 per cent) and ANA Holdings Inc. (17.0 per cent). Fuji Dream Airlines is a wholly owned subsidiary of Suzuyo & Co., Ltd. (core businesses include domestic and international logistics) and New Central Airlines is owned by Kawada Industries.

There is a long history of the Japanese Government formulating policies on inbound travellers (Soshiroda, 2005), although the current population decline and the Covid pandemic of 2019 has forced the government to re-think ways of attracting tourist business. In the 1990s, there was a further decentralisation of charter flights to regional airports in Japan when, from 1989 to 2010, the number of airports servicing charter flights increased from 18 to 32. The share of charter flights handled by regional airports increased from 75 per cent to 92 per cent (Wu and Peng, 2014: 51).

Japan deregulated its airline market in 2000 by implementing a new *Airline Act* that applied equally to both scheduled service and charter airlines. Japan lifted the restrictions regulating the number of charter flights operated by foreign carriers in an attempt to attract more foreign carriers. Suffering from an ageing and shrinking population, Japan began to vigorously promote inbound tourism in 2003 by launching the "Visit Japan Campaign".

On 16 May 2007, the Japanese Government launched the Asian Gateway Initiative to achieve "Asian Open Skies", especially to promote outbound tourism. Under the Asian Open Skies policy, Japan signed open skies treaties with Korea and the U.S.A. in 2010, with Hong Kong, Macau, Singapore, Malaysia and Taiwan in 2011, and with China in August 2012. The Ministry of Land, Infrastructure, Transport and Tourism progressively liberalised air charter services: in December 2008, it introduced measures to allow foreign airlines to operate charters between Japan and a third country without the permission of Japanese airlines.

In particular, the Ministry announced its intent to promote the air charter business at Narita International Airport by allowing charter

flights to be operated on routes serviced by scheduled flights. In 2010, as part of the Asian Gateway Initiative, the Ministry further deregulated Haneda by allowing this airport to service long-haul charters (Wu and Peng, 2014: 54). In the entire Japanese market, charters are operated on more routes and reach more airports than regular airlines (Wu, 2016: 263).

The year 2012 heralded the low-cost carrier (LCC) era in Japan when the first LCC-dedicated terminal was opened at Kansai Airport (Terminal 2) in October (Civil Aviation Bureau, Ministry of Land, Infrastructure, Transport and Tourism, 2012: 37–39). Terminal 2 marked the launch of an airport-airline collaboration, giving birth to the first Japanese based LCC, Peach Aviation. As shown in Table 20, three more Japanese low-cost carriers have entered the aviation market since 2020.

Airport Policy and Planning

The Japanese Government plays a dominant role in airport planning, funding and construction of aviation facilities. The *Aerodrome Development Law* (1952) stipulated that, of various aerodromes in Japan, those serving civil aviation routes are to be designated as "airports". These airports are regulated by the *Aeronautical Law* (*1952*) with regard to safety, *the Noise Prevention Law* (*1967*) with regard to environmental noise and the *Airport Development Law* (*1956*) with regard to airport developments (Shibata, 1999: 125).

The law classifies airports that offer scheduled commercial flights as: Category One—those required for international routes; Category Two—those required for major domestic routes; and Category Three—those required for regional domestic routes. Table 21 has been updated with a footnote and classifies the 94 Japanese airports into these three categories (Kōbe Airport had not been constructed at the time this table was prepared) and describes those airports that now have been privatised.

Table 21. Classification of Japanese Airports, as of 1999.*
Source: reproduced from Shibata, 1999, Table 1, p. 127, and updated by the Author.

Airport Category	Operator or Ownership	Name of Airport/ Aerofrome	Number of Airports
ONE	Ministry of Transport	Tōkyō International, Ōsaka International	4(5)
	Public Corporation	New Tōkyō International (Narita)	
	Stock Corporation	Kansai International, (Chūbu International)	
TWO	Ministry of Transport	New Chitose, Wakkanai, Kushiro, Hakodate, Sendai, Niigata, Nagoya, Yao, Hiroshima, Takamatsu, Matsuyama, Kochi, Fukuoka, Kita-Kyushu, Nagasaki, Kumamoto, Oita, Miyazaki, Kagoshima, Naha.	20
	Municipality	Asahikawa, Obihiro, Akita, Yamagata, Yamaguchi-Ube.	5
	Defense Agency or Defense Facilities Administration Agency	Tokushima Aerodrome, Sapporo Aerodrome, Komatsu Aerodrome, Miho Aerodrome.	4
THREE	Municipalities	(Medium and smaller regional airports)	59
		Total Number of Airports Subject to Application of Airport Development Law	92(93)

*As of 2021: Chūbu, Kansai, Kōbe & Ōsaka (Itami) Airports are privatised; Tōkyō International Airport (Haneda) is operated by the Civil Aviation Bureau, Ministry of Land, Infrastructure, Transport and Tourism; Sendai Airport, after the 2011 Northeast Japan Earthquake and tsumami was rebuilt for U.S. $21.1 million by a consortium led by the Tōkyū Corporation on a 30-year public service concession scheme; and Hiroshima Airport was privatised from mid-2021.

Airport development plans had been formulated by the Ministry of Transport every five years. The first plan was for the period 1967 to 1970 where the policy objective was to increase the capacity of Haneda and Ōsaka (Itami) Airports (Table 22). From 1971 to 2002 Airport Development Plans focused first on the construction of Narita Airport and from the 4th Plan onwards the focus was on the development of Kansai Airport.

The central government is responsible for building large international airports (the so-called Category I airport), and the objectives of the 5-Year Airport Development Plans between 1967 and 2002 make the focus on major international airports clear (Table 22). Because of shortages of funding in the national treasury the 7th Plan was over 7 years. There is no reference to subsequent airport development plans and the government of Japan introduced legislation on private finance initiatives (PFI) that permit the private sector to form consortia that can bid for concessions to operate major airports.

Table 22. Policy Objectives Japanese 5-Year Airport Development Plans.
Source: reproduced from Shibata, 1999, Table 2, p. 131.

Airport Development Five Year Plans	Period	Policy Objectives
First Airport Development Plan	1967–1970	To develop Ōsaka International Airport and Tōkyō International Airport (Haneda Airport) due to lack of overall capacities.
Second Airport Development Plan	1971–1975	Development of New Tōkyō International Airport (Narita Airport), improvement of Ōsaka International Airport, and development of regional airports.
Third Airport Development Plan	1976–1980	Promotion of works related to development of airport surrounding areas, development of Narita Airport.
Fourth Airport Development Plan	1981–1985	Ultimate completion of Narita Airport (the first phase of development of which was completed in 1978 development of Kansai International Airport, and of Haneda Airport towards the Tokyo Bay.
Fifth Airport Development Plan	1986–1990	Promotion of developing Narita Airport and Kansai International Airport, continuation of the Fourth Airport Development Plan.

Airport Development Five Year Plans	Period	Policy Objectives
Sixth Airport Development Plan	1991–1995	Further promotion of the Fifth Airport Development Plan.
Seventh Airport Development Plan	1996–2002	Further promotion of the Sixth Airport Development Plan (both Narita Airport and Kansai International Airport were commissioned but have not ultimately been completed).

Major airports (except for Narita and Kansai) are funded through the Airport Development Special Account. The main feature of this funding mechanism is that most of the money for building airports is accumulated from passengers' fares (and not from the general taxpayer). Passengers pay aviation fuel tax and airport charges which are included in airfares. This account is funded by airport charges—landing fees, special landing fees, navigation charges, aviation fuel tax, subsidies from the General Account of the national government and borrowing from government investment and loan program (Yamauchi and Ito, 1999, Figure 7, n.p.). Funds borrowed from the government will be also repaid by passengers in the future. Another characteristic of the funding mechanism is its revenue pooling. The revenue received at each airport is brought together into the special account and allocated according to the central governments planning.

As noted by Hayashi (2021: 1.1.B) a unique aspect is that Japanese airport terminals and car parks were constructed and are owned and managed by a private entity or a 'third sector' entity (a company jointly owned by a local government and private entities). Most of the airports in Japan were established and operated by the Ministry of Transport. Other modes of ownership involving the private sector have developed (as detailed later) because of the shortage of national funding. Funding problems have also caused landing charges to be increased to the highest level in the world.

In 2013, the *Act for the Operation of Government Controlled Airports by Private Sector Entities* was enacted to enable the central and local

governments to privatise airports through concession. The Ministry of Land, Infrastructure, Transport and Tourism announced the Basic Policy on the Operation of Government Controlled Airports by Private Section Entities (Basic Policy for Airports), which provides for the basic framework for all concessions of national airports (TMI Associates, 2020).

Airports in Metropolitan Tōkyō

Three civilian airports serve the Tōkyō metropolis (population in 2020 of about 37.4 million). The oldest is the Ministry of Communications' Haneda Airfield that dates from 1931. After the Second World War, the airfield was used solely by the occupying forces before being partially returned to Japan in 1952 and fully by 1959. The other international airport is located at Narita in Chiba Prefecture and commercial flights started there in 1978. Ibaraki Airport started as a military airfield, and is a minor regional airport that, today, offers services on a limited number of domestic and international routes.

Ibaraki Airport

Prior to March 2010 Ibaraki Airport (98 km north of Tōkyō Station) was known as Hyakuri Airfield. It was first developed by the Imperial Japanese Navy in 1937, with much of the land claimed from local farmers under the direct orders of Emperor Hirohito. After the end of the Pacific War, the locals reclaimed the land and resumed farming. The military base was re-opened in 1956 by the Japan Air Self-Defence Force. In March 2010, after a 22 billion yen (U.S. $243 million) local and national government investment, the airfield was renamed as Ibaraki Airport, offering only two routes—an Asiana service to Seoul (Asiana Airlines) and to Kōbe (Skymark Airlines)—with only 203,070 travelling passengers that year. The Ibaraki Airport website (http://www.ibaraki-airport.net/en/flight.html) lists domestic flights to Fukuoka, Kōbe, Naha and Sapporo (Skymark) and international flights to Shanghai and Xi'an (Spring Airlines) and to Taipei (Tiger Air Taiwan).

Haneda Airport

On 13 September 1945, Haneda Airfield was taken over by the U.S. Army Air Forces and renamed the Haneda Army Air Base. Projects to expand the air base were quickly formulated, with families from neighbouring areas being evicted from their homes. After a construction period that lasted from October 1945 to June 1946, Haneda Army Air Base had expanded to 257.4 hectares. In 1952, a portion of Haneda was returned to the Japanese Government, and that portion was named Tōkyō International Airport so as to establish the first international gateway. By 1959, all of Haneda had been returned to the Japanese Government.

The impoverished state of public finances in post-war Japan allowed only the paving the taxiway and apron at Haneda from the national budget. To restore the airport as an international gateway, Japan urgently had to expand the facilities to be suitable for an airport capable of serving Japan's capital of Tōkyō. The Japanese Cabinet decided to build a terminal with private capital, and in 1953 Japan Airport Terminal Co., Ltd. (JAT) was established through the cooperation of major Japanese businesses with capital of 150 million yen. The terminal opened in May 1955.

From that date, 64 significant airport developments (including some associated national and global developments) are listed on the Haneda Airport Website , where the details of each development can be found at https://tokyo-haneda.com/en/enjoy/history_of_haneda_airport/index.html. Images of the staged development of Haneda Airport between 1955 and 2010 can be found in Yamaguchi (2013, Figure 3, p. 11). In 1984, Haneda Airport "Okiai-tenkai" expansion project was initiated and a pair of parallel runways (A and C) and a single crosswind runway (B) were built in stages into Tōkyō Bay. In order to create the airport islands, dredged clays were used on these offshore expansion projects (1984–2007) and the D-runway project (2007–2010) (Watabe and Sassa, 2016).

With extra runway capacity, the international network expanded significantly from 18 flights a day to 4 cities to 55 flights a day to 17 cities, including the opening of new routes to Europe and to the U.S.A. With the opening of the International Passenger Terminal (TIAT) in 2011, the number of annual international passengers increased to 7.25 million. As a twenty-four-hour international hub, the number of passengers

connecting from Japanese regional airports to international flights at Haneda increased about four-fold. In addition, an international cargo terminal (TIACT), which has advanced functions, was opened. The desirability of increasing flights to and from Haneda is now under discussion. According to the Ministry of Land, Infrastructure, Transport and Tourism's website, the number of international flights of 60,000 per year in 2015 are projected to increase to 99,000 per year in 2020. Due to the Covid-19 pandemic and international travel restrictions, the total passenger traffic dropped from 86.9 million in 2019 to 31.2 million in 2020 (Gorka, 2021).

Narita International Airport

Projections of traffic growth and landing slots at Haneda Airport in the 1960s indicated there was a need for a second airport to serve the Tōkyō metropolis. However, the planning and delivery of Japanese airports was no longer confined to a dialogue amongst the three tiers of government. From the time that the Japanese Government made a formal decision on 16 November 1962, and the Ministry of Transport planned the "New Tōkyō International Airport" of about 2,300 hectares some 70 km from Tōkyō Railway Station, organised community opposition has dogged airport development up to the present day.

The example of the location of Narita Airport represents the most extreme case, probably in its history, of civil disobedience against a Japanese government, from within a society that is traditionally respectful of hierarchical authority (Andrews, 2016). Whilst community consultation on major infrastructure projects was not common practice by all governments in the 1960s, the lack of government transparency and the failure to address land acquisition adequately have been factors that have fuelled trenchant opposition to the development of Narita Airport (Bowen, 1975). Aspects of this story still resonate in this third decade of the 21st century.

After investigations of alternative sites in the prefectures of Chiba and Ibaraki, The Aviation Council Report to the Minister of Transport recommended the Tomisato site (southwest of the finally selected site) that was unexpectedly announced by the Chief Cabinet Secretary, Tomisaburo Hashimoto, at a press conference. Opposition movements

had already risen in each of the potential airport sites, such as the Tomisato-Yachimata Anti-Airport Union formed in 1963. Local farmers expressed outrage at the one-sided nature of the decision and allied with political opposition parties—the Japanese Communist Party and the Social Democratic Party of Japan. By 1966 opposition to the proposal of building an airport still remained strong.

The secretive side of Japanese politics emerged with the Satō Cabinet (Satō Eisaku, Prime Minister 1964–1972) colluding with the Transport Vice-Minister, Wakasa Tokuji, the Liberal Democratic Party Vice-President, Kawashima Shōjirō and the Chiba Prefectural Mayor, Tomonō Taketo, to move the construction site 4 km to the northeast onto the Goryō Farm—a state-owned tract of land that once had been in the ownership of the Imperial Family. The Cabinet anticipated—incorrectly as events turned out—that the impoverished farming communities of Sanrizuka would sell their land and be compensated with a "fair" price as was the law (Lemay-Fruchter, 2021). As it transpired, the Goryō Farmland comprised less than 40 per cent of the area needed for the airport plan so a major program of land acquisition from the public was still required.

On 22 June 1966, the Liberal Party Prime Minister, Satō Eisaku, after briefing prefectural officials, held a broadcast conference with Mayor Tomonō Taketo regarding the Sanrizuka plan. As no public consultation had taken place, Sanrizuka and Shibayama residents learnt of the decision from the broadcast. Furious opposition broke out amongst frustrated communities, as had previously occurred in Tomisato. The opposition was led by the Sanrizuka-Shibayama United Opposition League against Construction of the Narita Airport (三里塚芝山連合空港反対同盟), which locals formed under the leadership of government opposition parties.

At its height, the 'union' mobilised 17,500 people for a general rally, while thousands of riot police were brought in on several occasions. The "union" became increasingly radicalised and the struggle resulted in significant delays in the opening of the airport, as well as deaths on both sides (known as the Tōhō Jūjiro Incident). The government originally tried to purchase land with the landowners' agreement. However, as a substantial number of landowners refused to sell their land, the government decided in 1971 to legally evict residents which only prompted more protests. As of 2020, there remain five households

on the airport property with one owner recently reported to have turned down U.S. $1.6 million for the purchase of his land (Leff, 2020).

Narita Airport finally opened on 20 May 1978. The opening day attracted a union rally estimated at 22,000 people who declared a continuing campaign of resistance against the airport. Over 500 guerrilla actions have taken place against Narita airport since its opening in 1978 (Leff, 2020). For instance, there were clashes between riot police and protesters, and numerous attempts of arson targeted at fuel pipelines. However, with Narita Airport operational, and the chance of closing it remote, the defiance of the union movement gradually eroded, and internal fractures split the union movement, severely damaging its credibility and influence. In addition, the government started adopting a more conciliatory approach in the 1990s, commencing with a stakeholder symposium on various airport issues. In 1995, the (then) Prime Minister, Murayama Tomiichi (June 1994–January 1996 as Head of Japanese Socialist Party), issued an apology to the affected residents.

The final site area of Narita International Airport was reduced to 1,040 hectares that meant that the northerly runway had to be reduced to 2,600 metres in length. In March 2012 the introduction of the simultaneous parallel takeoff and landing system, together with two runways of length 2,500 metres, increased the number of annual aircraft slots to 250,000. In 2003, the Japanese Government passed the *Narita International Airport Corporation Act* (成田国際空港株式会社法) that privatised the airport. On 1 April 2004, the New Tōkyō International Airport was officially renamed Narita International Airport. Its site plan can be found at Civil Aviation Bureau, Ministry of Land, Infrastructure, Transport and Tourism (2012: 23).

According to the Civil Aviation Bureau website the aim of Narita International Airport is to strengthen the international aviation network to make the airport a major hub in Asia by expanding domestic feeder lines, offering more aviation services, such as low-cost carriers (Jetstar Japan and AirAsia Japan) and business jets, and increasing terminal and parking capacity. The airport handled 44.3 million passengers in 2019, dropping to 10.5 million in 2020 (Gorka, 2021).

The Japanese Government is in the process of boosting Narita International Airport as an international hub. The actions by Narita International Airport Corporation (2021) include from the winter of

2019: curfew restrictions were removed to allow aircraft to take off and land up to midnight; 146 additional slots between 21.00 and 24.00 hours; and reconfiguring rapid exit taxiways to allow four more flights each hour. The current short runway is to be lengthened to 3,500 metres. The construction of this third runway, at a cost of some U.S. $4.6 billion, is expected to be completed by 2030 (Ellis, 2019: 1). The new runway increases the annual number of airport slots from the current 300,000 to 500,000 or from 72 hourly slots to 98 hourly slots.

Airports in the Ōsaka Region

There are three major airports in the Ōsaka region located in Kōbe, Ōsaka Itami and Kansai that collectively handled about 47 million passengers in 2019. Today, they are managed and operated by a private-sector consortium led by VINCHI airports (Headquarters in Paris) but the historical path of each airport has differed. Itami (Ōsaka No. 2 Airfield) was a compromise location involving the city governments of Ōsaka and Kōbe, but, from the late 1930s, it was predominantly a military facility—first by the Japanese armed forces then by the U.S. occupying forces until being returned to the Japanese Government in 1959 and then used for civilian flights.

Kōbe and Kansai are relatively new airports constructed in Ōsaka Bay (Yukawa and Matsubara, 2019, Figure 1, n.p.). The introduction of jet aircraft, and the associated noise, prompted community action that ultimately led to the construction of Kansai airport built in Ōsaka Bay that was operational from 1994. The City of Kōbe continued to lobby for its own airport and the Japanese Government stimulus packages following the Great Hanshin Earthquake of January 1995 provided an opportunity to construct a single runway airport on an artificial island in Ōsaka Bay.

There are two other airports in the Ōsaka region to consider: the first because of its association with the early years of civil aviation in Japan; the second because it is one example of the numerous small airports scattered across the Japanese archipelago. Seaplanes took off from the waters off Ohama Coast, near Sakai, and offered passenger services through Kizugawa Airfield (at the mouth of the Kizu River that empties into Ōsaka Bay) then onto Shikōkū Island. Yao Airport is a small general aviation airport that offers some scenic and charter flights.

Kizugawa Airfield

From 1923, seaplanes started taking off and landing in the waters at the mouth of the Kizu River with flights to and from Tokushima, Takamatsu, Matsuyama (Shikōkū) and Beppu (Kyūshū). With the growing demand for mail and cargo in the Ōsaka region, a private airfield on land was required. The Ministry of Communications Aviation Bureau selected the wetland at the mouth of the Kizu River for the site to construct the 39-hectare airfield that was 14 km south of Ōsaka Railway Station (Wikipedia Japan, https://ja.wikipedia.org/wiki/木津川飛行場).

The airfield, built by the Ministry of Communication as its first aerodrome project in Japan, was put into service in 1929 when Japan Air Transport opened flights to the Tachikawa Army Airfield (Tōkyō) and the Tachiarai Army Airfield in Fukuoka. In 1938, Kizugawa was equipped with a runway length of 720 metres, and the airport was, at the time, the largest aviation base in Japan. Civil flight operations were moved to Ōsaka No. 2 Airfield (Itami) as the surrounding area had become industrialised, with chimneys causing obstacles to flight manoeuvres, and problems with heavy fog. The Japanese military continued to use the airfield.

Ōsaka No. 1 Airfield (Yamato River Estuary)

In 1931, the City of Ōsaka formulated a landfill plan on the estuary of the Yamato River for a new airfield site (Ōsaka No. 1 Airfield), and, two years later, construction started. It was completed in 1939. However, the chairman of the Kōbe Business Association objected on the grounds that it was too far away to serve Kōbe. The Ōsaka Chamber of Commerce and Industry defended its locational decision until finally the Japanese Government stepped in, arguing that the location was unsuitable for an international airfield and prone to thick fog. The City of Ōsaka abandoned its plan in 1942 (Hashizumi, 2004), and national and prefectural governments worked collaboratively on a more suitable airfield location.

Ōsaka No. 2 Airfield (Itami)

As a compromise solution brokered by the Japanese Government, construction on Ōsaka No. 2 Airfield (Itami) began in July 1936 on a 53-hectare site that was about 10 km north of Ōsaka Railway Station and 36 km east of Kōbe city centre. It opened as No. 2 Ōsaka Airfield (第二大阪飛行場) in 1939. Most of the land is located in Hyōgo Prefecture (Itami City) but the remaining portion is in Ōsaka Prefecture (cities of Toyonaka and Ikeda). The terminal complex is located today in all three of these cities. Initially, the airport was used primarily by the Imperial Japanese Army. Its military function continued when occupation forces took over the airfield in 1945, expanding it to 221 hectares, and renaming it the U.S. Itami Air Base. The airfield was used extensively by U.S. forces during the Korean War (June 1950–July 1953).

Following its return to Japanese control in March 1959 it was renamed Ōsaka Airport. The Japanese government planned an airport expansion project with an additional 82.5 hectares of land so that the runways could accommodate the landing and take-off of jet aircraft. Despite some protests from locals, the plan was approved by the three neighbouring local government assemblies between 1960 and 1961 with strong backing from local business groups. The aviation industry was also supportive because it was anxious to compete with the high-speed rail services that opened between Tōkyō and Shin-Ōsaka in 1964.

Jet flights began on 1 June 1964 and that immediately triggered more complaints from nearby residents about jet aircraft noise (Yukawa and Matsubara, 2019, n.p.). Further protests occurred in 1966 when the government compulsorily purchased land to extend the runway. The main runway at Ōsaka Airport was completed in 1970 and served major international airlines such as Pan Am, British Airways, Cathay Pacific and Air India. With the rapid growth of the Japanese economy, the areas around Ōsaka Airport had become a residential commuter-belt to Ōsaka.

Dissatisfied local residents became organised and sued the managing airport organisation—the national government—demanding compensation for aircraft noise-related damage (exacerbated by the U.S. Armed Forces using the airport for aircraft maintenance and re-fuelling) and the suspension of night-time flights. In addition to this lawsuit,

over 20,000 local residents wanted the closure of the airport on grounds of 'environmental pollution'. The injunction of night flights was not granted by the Supreme Court after 6 years of deliberations, but the national government voluntarily restricted the airport operating hours to between 07.00 and 21.00 hours.

By the mid-1970s, the airport was subject to extensive slot restrictions, with operations limited to 200 jets and 170 propeller aircraft per day, and no take-offs or landings allowed after 21.00 hours. These restrictions led the major domestic airlines to adopt more widebody aircraft that caused additional concern amongst locals who protested against the increased aircraft noise and the greater danger of a crash event.

Plans were mooted to close Ōsaka Itami Airport following the opening of Kansai Airport in 1994, but nearby communities opposed such a move because of the likely job losses. The Japanese Government proposed downgrading Ōsaka Itami Airport's status to a second-class airport. However, that would have imposed on local governments the payment of one-third of the airport's operating costs and this generated more protests from the surrounding local governments. The proposal to close Ōsaka Itami Airport was withdrawn.

Kansai International Airport

In the late 1960s, the Kansai region was losing trade, development, and firms to the rapidly growing Tōkyō region. To help make Ōsaka and Kōbe more attractive, both city governments proposed the construction of a new international airport to rival the then second airport for Tōkyō at Narita. Ōsaka Itami Airport was facing capacity constraints as air traffic boomed along with economic growth. At first, developers, and some government officials, wanted to build the new airport near Kōbe but the City of Kōbe Government rejected a plan for a large international airport.

In 1971, the Ministry of Transport commissioned a study into the location of a new airport to accommodate growing passenger demand from Ōsaka and to eliminate the noise issue at Ōsaka Itami Airport. The planning objective of Kansai Airport was to resolve the environmental noise problem at Ōsaka Itami Airport. Out of the five feasible sites in the Ōsaka Bay area, Senshu, the most southern location, was selected but opposition from residents forced the airport site 5 km offshore on

reclaimed land (Yamaguchi, 2013: 16). The plan was for an artificial island that would be 4,000 metres long and 2.5 km wide (1,000 hectares). Innovative engineering was required for solid foundations for the runways and the built structures, and building structures to withstand typhoons, waves and earthquakes.

The airport cost over U.S. $20 billion to build. Construction started in 1987, and, once the island had been completed and the compacted soils allowed to settle, the airport construction began, taking an additional four years. The airport has two parallel runways (built by 1994 and 2007, respectively), two terminals and a cargo facility. To connect the island with the mainland, a 3-km long bridge was built at a cost of U.S. $1 billion (Cummins, 2020). It is worth noting that advances in aircraft engine technology had shrunk the footprint of the noise contours by the time Kansai Airport was opened in 1994 so that it would have had been possible to have built it closer to the shore, thereby reducing the costs of ground transport access.

The financial scheme to construct Kansai Airport involved not only central and local governments but also the private sector. This reflected Japanese Government economic policy during 1980s to endorse "Minkatsu"—private finance initiative (PFI)—in building social infrastructure, such as city halls. By international comparisons, Japan was slow to extend PFI to economic infrastructure such as airports. In 2012, in order to slash the size of government debt, the Japanese Government passed a law to establish the *New Kansai International Airport Corporation* (*NKIAC*) and to integrate Kansai Airport and Ōsaka Itami Airport in order to pool the cash-flows together, to increase corporate value by strategic investment, and to market the operational right of the two airports to competing consortia. In September 2013, NKIAC announced that it would acquire Ōsaka Airport Terminal Co. for 27.8 billion yen (about U.S. $262 million).

As pointed out by Freshfields Bruckhaus Deringer (2021), a change in the PFI Law made the concession-style public-private partnership (PPP) possible but a tailoring of the PFI framework was required to comply with international investors' expectations. NKIAC conducted a public tender to sell the operating rights for the two airports in May 2015. The sole bidder for the two airports on a 45-year concession was a consortium led by VINCI Airports (40 per cent), with ORIX Corporation, a Japanese integrated financial services company (40 per cent) and the remaining

20 per cent by Hankyū Hanshin Holdings and Panasonic (www.vinci-concessions.com) and other investors.[3] The contract was signed on 15 December 2015. According to a press release by VINCI Airports (2017), the consortium was the preferred bidder for the 42-year Kōbe Airport concession contact—a bid that was also successful.

Kōbe Airport

The history of Kōbe Airport is a story of local lobbying for an airport closer to Kōbe as the need for an alternative to Ōsaka Itami Airport became apparent, as discussed above. In 1971, the Kōbe City Government proposed an airport adjacent to Port Island—an artificial island constructed south of Sunnomiya Station in Ōsaka Bay between 1966 and 1984 for maritime, educational, commercial and recreational uses. The plan called for six runways more than 3,000 metres in length built on a 1,100-hectare artificial island. However, the Mayor of Kōbe, Miyazaki Tatsuo, declared his opposition to building such a large airport that was located so close to the city.

He was re-elected mayor in 1973 by defeating a candidate whose manifesto supported the airport development. Kōbe businesses were strong supporters of an airport and pressed the city government for a smaller facility with only one 3,000-metre long runway. This plan was submitted to the Ministry of Transport in 1982 as an alternative to the Kansai Airport proposal that was being supported by the Ōsaka and Wakayama prefectural governments. After the national government rejected the Kōbe proposal, the Hyōgo Prefectural Government switched its support in 1984 for the Kansai Airport proposal.

3 The full list of investors are: ASICS Corporation; Iwatani Corporation; Osaka Gas Co., Ltd.; Obayashi Corporation; OMRON Corporation; The Kansai Electric Power Company, Incorporated; Kintetsu Group Holding Co., Ltd.; Keihan Holdings Co.,Ltd.; Suntory Holdings Limited; JTB Corp.; Sekisui House, Ltd.; Daikin Industries, Ltd.; Daiwa House Industry Co., Ltd.; Takenaka Corporation; Nankai Electric Railway Co., Ltd.; Nippon Telegraph and Telephone West Cerporation; Panasonic Corporation; Hankyu Hanshin Holdings, Inc.; Rengo Co., Ltd.; The Senshu Ikeda Bank, Ltd.; Kiyo Holdings, Inc.; The Bank of Kyoto, Ltd.; The Shiga Bank，Ltd.; The Nanto Bank, Ltd.; Nippon Life Insurance Company; Mizuho Bank, Ltd.; Sumitomo Mitsui Trust Bank, Limited; MUFG Bank, Ltd.; Resona Bank, Limited; and the Private Finance Initiative Promotion Corporation of Japan (http://www.kansai-airports.co.jp/en/company-profile/about-us/).

In 1985, the city and prefecture decided to independently fund the construction of its own airport, but its construction was stalled by a lack of funding. On January 1995, a 7.2 magnitude (Richter scale) earthquake with an epicentre at nearby Awaji Island hit the region causing loss of life, with deaths amounting to 4,571 in Kōbe alone (The City of Kōbe, 2009: 1). There was substantial damage to buildings, infrastructure (Chung, 1996, Chapter 4) and the three major airports in the region (Chung, 1996: 260–266). To aid the recovery of a devastated local economy the Japanese Government used infrastructure spending as a stimulus package.

Despite ongoing opposition from sections of the community, there remained support for the airport plan. At the 1997 mayoral election, the pro-airport coalition won a narrow victory over the anti-airport coalition. Construction began in September 1999, but the political controversy continued: 87,000 signatures were collected in a petition to dismiss the Mayor in 2000. A citizen lawsuit to cancel the project was dismissed in 2004. The airport finally opened on 16 February 2006 at a cost of U.S. $3 billion.

In 2013, the Kōbe mayor, Yada Tatsuo, endorsed a proposal to consolidate the management of the three Kansai region airports by adding Kōbe Airport to the planned sale in 2014 of operating concessions at Ōsaka Itami and Kansai airports. Accordingly, VINCI Airports added Kōbe Airport to its management and operations portfolio in April 2018. Agreement on the gradual expansion of domestic flight slots and operating hours at Kōbe with a maximum daily aircraft movement of 80, and operation hours were extended from 7:00 to 23:00 hours from May 2019.[4]

Yao Airport

Yao airport started as the Hanshin Aviation School in 1938. Two years later, the airfield was seized by the army as the Taishō Airfield and was expanded. After the Second World War, the occupation forces called it the Hanshin Airfield before it was returned to Japanese control. Yao airport, operated by the Ministry of Land, Infrastructure, Transport and Tourism, is located 15 km southeast of Ōsaka Railway Station and it

4 http://www.kansai-airports.co.jp/en/company-profile/about-airports/kobe.html

functions both as a general aviation airport and as a base for the Japan Ground Self-Defence Force (JGSDF Camp Yao). Several small airline carriers offer sightseeing and charter flights, including Asahi Airlines and Hankyū Airlines (owned by Hankyū Electric Railway Company). Established in 1966, the First Flying Co., Ltd. is an air carrier based at Yao Airport. It operates inter-island passenger services in Okinawa and irregular passenger services to the Hiroshima-Nishi airport.

Airports in the Nagoya Region

Nagoya's first airport, constructed in 1944, was the Komaki Airport used by the Imperial Japanese Army Air Service. It was heavily damaged by allied bombs during the Pacific War, rebuilt by the allies as their military base before being returned to the Japan Government in 1957. It was Nagoya's main airport until the opening of Chūbu Centrair International Airport in 2005, located in Ise Bay some 47 km south of Nagoya Railway Station.

Komaki Airfield/Nagoya Airfield/Nagoya Airport

In 1944, Komaki Airfield was developed 12 km north of Nagoya Railway Station for the Imperial Japanese Army Air Service, but, during the Pacific War, it was bombed heavily that year and also during the first half of the next year. The airfield was taken over by the American occupation forces and renamed Nagoya Air Base when it was reconstructed. In May 1946, the base became the Headquarters of the Fifth Air Force that controlled air force occupation units throughout Japan. Nagoya Air Base was returned to the Japanese Government in July 1957.

Nagoya Airport served as the main airport for Nagoya until the opening of Chūbu Centrair International Airport in 2005. During the 1980s and early 1990s, Nagoya Airport was a busy international airport because of the overflow from Japan's other international airports. The airport was constrained by its location in a residential area of Aichi Prefecture that restricted the number of daily flights and imposed a night-time curfew. It lost some business in 1994 with the opening of Kansai Airport that was some 210 km away.

On 17 February 2005, nearly all of Nagoya Airport's commercial transport flights moved to Chūbu Centrair International Airport and

it was renamed Nagoya Airfield. Today, Aichi Prefecture manages the airport facilities and regularly handles international business flights (with a dedicated business aviation terminal), regional services, general aviation and the Japan Air-Self-Defense Force.

Chūbu Centrair International Airport

The Nagoya region has a population of about 10 million and is a major manufacturing centre, with the headquarters and production facilities of the Toyota Motor Corporation and production facilities for Mitsubishi Motors and Mitsubishi Aircraft Corporation. Local business groups lobbied government for a new airport, especially for 24-hour cargo operations. The airport's operator is a consortium comprising the national and local governments and over 200 Japanese companies. The consortium, known as the Central Japan International Airport Company (CJIAC), was appointed by the Japanese Government in July 1998 to be the constructing and managing body of Centrair airport. There were extensive protests over the project's necessity by local environmentalists and fishermen. Airport construction started in August 2000.

Functioning as a new air gateway to the central region of Japan, the airport was built as an artificial island (the land-reclamation scheme started in 2001 and was completed by the Spring of 2003) in shallow water located off the eastern shore of Ise Bay near Tokoname. The project was delivered 100 billion yen under the budget of U.S. $7.3 billion and was opened, on schedule, in March 2005. The island, constructed by Penta-Ocean Construction Co, was initially designed to allow for one large runway. The airport occupies an area of 4.3 km by 1.9 kim on the island (817 hectares), leaving the remaining space for local wildlife. A second runway was added later (Airport Technology, 2021).

The passenger terminal was designed by a joint venture consortium. CJIAC commissioned four construction companies to participate in the planning, design and survey of the passenger terminal area. The four companies were two Japanese companies, Nikken Sekkei Ltd and Azusa Sekkei Co., Hellmuth, Obata and Kassabaum Inc of the U.S.A. and Bovis Program Management Japan Inc. The English civil engineering firm, Arup, was responsible for structural and faced engineering of the buildings.

Chūbu Centrair International Airport achieved its policy objectives with the transfer of flights from Nagoya Airport and a new airport with no curfew restrictions that has allowed the passenger business to grow. The sharp downturn in airline patronage in 2020 was a result of the Covid-19 global pandemic that curtailed domestic and international travel with governments of countries imposing lockdowns, quarantines and travel restrictions and airlines substantially cutting passenger services (ICAO, 2021; OECD, 2020). In Japan, in the week 10–16, 2020, the air travel sales volume registered a decline of 93 per cent compared to the equivalent weeks of the previous year. This constituted a decline of over 90 per cent for eleven weeks in succession since the global outbreak of the coronavirus pandemic (Statistica, 2020).

Japanese Airport Terminals

The laws on airport development in Japan specify that the private sector may be involved in the planning, construction, management and operations of terminals and car parking. This private entity, or a 'third sector' entity (a company jointly owned by a local government and private entities). One example of this is at Haneda Airport where the Japan Airport Terminal Company (JAT) has been active since 1953, and, at other major airports, since 1973. The major developments that have been initiated by JAT at Haneda are summarised in Table 23. Major capital works projects include the international terminal (1970), its extension (2002), terminal 2 (2004), its extension (2010), a new international terminal (2010) and the P4 parking structure (2010).

Table 23. Major Developments of Terminals and Parking, Haneda and Narita Airports by Japanese Airport Terminals (JAT).
Source: based on Japan Airport Terminal Co, Ltd, https://www.tokyo-airport-bldg.co.jp/company/en/corporate_profile/history/history.html.

Date	Airport Terminal Development
July 1953	JAT was established with ¥ 150 million in private capital and started planning for terminal building projects
May 1955	Completed and opened terminal building and started rental and merchandise sales operations
May 1970	Completed new international arrival terminal building

Date	Airport Terminal Development
Feb. 1973	Started commissioned management and maintenance of terminal building at Narita International Airport
Mar. 1978	Opened Narita Office at Narita International Airport
May 1978	Started duty-free and other merchandise sales, hotel reservation services and other operations at newly opened Narita International Airport
Sep. 1993	Started operation of Terminal 1
July 1994	Opened Ōsaka Office at Kansai International Airport
Mar. 1998	Started operation of Haneda International (passenger) Terminal
May 2002	Completed extension work on Haneda International (passenger) Terminal
Dec. 2004	Started operation of Terminal 2
Feb. 2005	Opened Chūbu Office at newly opened Central Japan International Airport. Started wholesale of duty-free goods at newly opened Central Japan International Airport
Feb. 2007	Started operation of South Pier in Terminal 2
Aug. 2010	Started operation of complete P4 parking structure
Aug. 2010	Completed extension of Haneda Terminal 2 in Phase III plan
Oct. 2010	Started operation of extended south part of Haneda Terminal 2
Oct. 2010	Started operation of new International Terminal (PFI project)
Nov. 2011	Completed renovation of Haneda Terminal 1
Apr. 2013	Started operation of extended South Pier in Haneda Terminal 2

Terminal management has demonstrated its ability to respond to external events. For example, Tokyo International Air Terminal Co., Ltd. introduced a safety measure for the Covid-19 outbreak for international departure process at Haneda/Terminal 3—an automated facility where passengers can scan their boarding passes by themselves and pass through the gate to the aircraft in accordance with the digital sign or flapper doors (https://tokyo-haneda.com/site_resource/whats_new/pdf/000008004.pdf).

The privatisation of the three airports in the Kōbe-Ōsaka region gave VINCHI Airports the responsibility for developing terminal space and other functions at those airports. Details of the seven Kansai Airports' companies involved in terminal operations are listed on the airport website (Table 24). They include retail, security, firefighting, passenger information, car park management, construction and maintenance, heating and cooling and hotels.

Table 24. Kansai Airports and Group Companies and the Business Scope of Terminal Services.
Source: reproduced from http://www.kansai-airports.co.jp/en/company-profile/about-us/file/group.pdf.

	Name of group companies	Business scope
1	[New company] Kansai Airports Retail & Services	Retail: duty-free, other retail, F&B Services: currency exchange, advertising, insurance, lounge operation
2	[New company] Kansai Airports Operation Services	Security, fire fighting, passenger information, car park management, cleaning, baggage cart service, daily maintenance
3	[New company] Kansai Airports Technical Services	Maintenance, construction projects, IT services
4	CKTS Co., Ltd. *No change to company name; Business scope changed	Passenger, ramp & cargo handling, aircraft maintenance support, vehicle maintenance
5	KIA Heating & Cooling Supply Co., Ltd. *No change to company name & business scope	Heat supply
6	World Air Passenger Service Co., Ltd. *No change to company name; Business scope changed	Hotel (ITAMI), temp staffing
7	Kansai Airports Kobe *No change to company name & business scope	Operation, maintenance and management of Kobe Airport

Airport Ground Transport Access

The international airports located in the three major conurbations of the case study area—Chūbu, Ōsaka and Tōkyō—are well connected by ground access to their hinterlands, with the exception of Ōsaka Itami Airport. The Chūbu Centrair Airport station is owned by Central Japan International Airport Line Company, Ltd. and leased to the private railway operator, Meitetsu, whose services connect to the Tokomane railway line then on to Jingu-mae in Nagoya. The airport is also connected to Nagoya Station by the Nagoya Railroad. The fastest train takes 29 minutes (using μ-SKY).

Kansai Airport has two railway company services: JR West that connects to Ōsaka Station (about 70 minutes) via Tennōji; and the short Nankai-Kūkō line to Izumisano Station operated by the Nankai Electric Railway Company. The Port Liner rail connects Kōbe Airport to Sannomiya Station, Kōbe, in 18 minutes. Ōsaka Itami Airport access by rail is complicated and depends on the destination. The airport is connected by a monorail to Hotarugaike Station that has a plethora of railway companies serving the Ōsaka, Kōbe and Kyōto areas (https://www.osaka-airport.co.jp/en/access/train).

There are two rail options to get to and from Narita International Airport. There are the railway services to Tōkyō Station on the JR East Narita Express which takes about an hour. The alternative route to Tōkyō is to take the Keisei Electric Railway Express Skyliner to Ueno Station (with connecting Shinkansen services) which takes forty-one minutes (https://www.uenostation.com/keisei-skyliner-for-narita-airport/). Haneda Airport is directly connected to the Keikyū Line and from Terminal 3 to Shinagawa (where there is a Shinkansen station) which takes thirteen minutes on the limited express service. Also from Terminal 3 the Tōkyō Monorail Line takes thirteen minutes to Hamamatsu-chō Station (https://tokyo-haneda.com/en/access/train/index.html).

Conclusions

Civil aviation is subject to international technical and safety standards such as those issued by the International Civil Aviation Organisation (ICAO) and to bilateral agreements on air services; Japan is no exception. The country was a signatory to the 1919 International Convention Relating to the Regulation of Aerial Navigation and signed its first bilateral airline agreement with the U.S.A. in 1952, followed by similarly structured agreements with other countries. Today, the manufacture of passenger jet aircraft is dominated by two overseas companies—Boeing and Airbus. In the early years of aviation in Japan, civilian aircraft were imported from France (Maurice Farman and Curtis float biplanes), the Netherlands (Fokker) and the U.S.A. (Douglas DC-2). Later, the Douglas DC-3 was manufactured in Japan under licence and local companies—Mitsubishi and Nakajima—made small civilian planes.

The Japanese governments and the military jointly promoted aviation in the late 1910s to the late 1930s. The navy formed The Committee for Naval Aeronautic Research and, in 1916, the Japanese Imperial Navy initiated the land-based, naval air stations and flying units. Three years later, the Ministry of War established a Special Aeronautical Committee to promote and regulate all civil aviation enterprises through the Air Navigation Law of April 1921.

Three private-sector airlines offered domestic, regional services until they were nationalised in late 1928 as the national flag carrier, the Japan Air Transport Corporation, under the control of the Ministry of Communications. The route network grew along with the territorial expansion of the Japanese Empire. With the defeat of Japan in the Pacific War civilian air transport did not resume until 1952 with the national carrier re-branded as Japan Airlines (JAL), which operated domestically and international until its privatisation in 1987.

The U.S. Occupation Forces used Japanese airfields in the 1940s and 1950s and promoted to the Japanese Government the concept of airline competition. By the mid-1960s, there were four Japanese airline companies: JAL; ANA; Japan Domestic Airlines (JDA); and Toa Airways (TA). A Cabinet Meeting Resolution of 1970 "Concerning Airline Operations" restructured the industry, and, in September 1985, the Minister of Transport introduced partial deregulation of the industry and further deregulation in 1997. The impacts of these policies on new entrants into the airline business are summarised in Table 25.

Table 25. Summary of Institutions and Organisations—Japanese Aviation and Airports.
Source: Author.

Industry Function	Institution	Organisation
International Convention Regulation of Aerial Navigation	Government of Japan (1919)	
Air Navigation Law	Ministry of War (1921)	
Aeronautical Law	Ministry of Transport (1952)	

Industry Function	Institution	Organisation
Aerodrome Development Law / Airport Development Law	Ministry of Transport (1952; 1956)	
Airlines	Japan Air Transport Corporation (1928–38), Greater Japan Airways (1938–45), Japan Airlines (1951–1987); Manchukuō Aviation Company (1932–45)	Japan Air Transport Institute (1921–29); All Nippon Airways (1952–) ; Low-cost carriers, e.g. Skymark Airlines (1998–); Jetstar Japan (2012–)
Airports	Ministry of Communications; Ministry of Transport; MLIT, e.g. Haneda (1931–); Narita Airport (1978–); Ōsaka Itami (1959–2015); Kōbe (2006–2017); Nagoya Airport (1957–2005); Kansai (1994–2015)	Chūbu Centrair (2005–); Kansai (2015–); Ōsaka Itami (2015–); Kōbe (2017–); Hiroshima (2021–)
Airport Terminals and Parking	Prefecture/City Governments and private sector at most terminals	Japan Airport Terminal Co. (1953–); VINCHI Airports (2015–)

Japan signed open skies treaties with Korea and the U.S.A. in 2010, with Hong Kong, Macau, Singapore, Malaysia and Taiwan in 2011, and with China in August 2012. The Ministry of Land, Infrastructure, Transport and Tourism progressively liberalised air charter services. In December 2008, it introduced measures to allow foreign airlines to operate charters between Japan and a third country without the permission of Japanese airlines. This spawned low-cost carriers (LCC) that has driven domestic and international passenger demand that then required more airport capacity.

Airport planning and construction have been in the hands of governments in Japan. Pre-1945, the airfields were shared between the military and civilian airlines. In 1930, the Ministry of Communications purchased a 48-hectare piece of private land in Haneda on Tōkyō Bay

and constructed a new civilian airfield that handled flights to and from various airfields in Japan, in Korea, and in the puppet state of Manchuria. With the resumption of civilian aviation the Japanese Government enacted the *Aerodrome Development Law* (*1952*) with Japanese airports being regulated by the *Aeronautical Law* (*1952*) with regard to safety, the *Noise Prevention Law* (1967) with regard to environmental noise and the *Airport Development Law* (*1956*) with regard airport ownership and airport funding.

The specific details of airport construction, development and funding (in more recent years, using a concession model of financing from the private sector) have been explained using a range of airport classifications in the Chūbu, Ōsaka and Tōkyō metropolitan regions (with a combined population of about 82 million).

The unique aspect of the *Airport Development Law of 1956* is that Japanese airport terminals and car parks were constructed and are owned and managed by a company jointly owned by a local government and private entities. The case study of the Japan Airport Terminal Company (JAT) describes how the private company has been active since 1953 at Haneda Airport and at other major airports since 1973.

A theme throughout this book has been the relative role of the state institutions when compared with private-sector organisations in the planning, construction and operations of transport infrastructure and services. In the case of aviation and airports, Table 25 has summarised some of the main events in Japanese aviation and airport history and classifies the main actors as institutions or organisations. Araki (n.d.: 3) has explained, for all Japanese airports, the ownership—whether government or private sector—of facilities (runways, taxiways and aprons), terminals and air traffic control. The aviation industry has always been regulated, and policies are formulated by committees so there is less opportunity for individuals to make substantial contributions to the historical evolution of Japanese airports and air services.

The characteristics of Japanese airport rail connections are that train services are integrated into airport design and layout and furthermore these services provide convenient transfers onto the high-speed railway network that now covers a large portion of the main Japanese islands. The integration of transport with land uses (for example, express rail services and airports) is a policy issue that has tested governments

in developed countries since the late 1960s. The next chapter of this book will examine how Japanese governments have approached the challenges of such integration with particular reference to the Tōkyō metropolis.

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