

# Asian Breeze (33)

(亜細亜の風)

A Happy Spring to you all

4 April, 2014

Dear Coordinators and Facilitators in the Asia/Pacific region. A long waited Spring has finally come to Tokyo with a full bloom of "Sakura" or Cherry trees. Since this winter was very cold with a lot of snow, the bloom of Sakura was especially waited impatiently.

April is a start of everything in Japan such as the entrance of schools, entrance to companies and governments and a new fiscal year. Sakura seems to be blessing this new start



as if Spring refreshes everything. Following illustration is a typical image of the entrance of elementary school with the Sakura bloom. One point lesson for Japanese; 「入学式」 in this illustration means the entrance ceremony at school.

In this issue, we have received a wonderful contribution from Norway featuring the Airport Coordination Norway (ACN) and four level 3 airport of Oslo Gardermoen Airport (OSL), Stavanger Airport, Sola (SVG), Bergen Airport, Flesland (BGO) and Trondheim Airport, Værnes (TRD), and one level 2 airport of Kirkenes Airport, Høybuktnøen (KKN). I hope you will enjoy reading them.

## Airport Coordination Norway (ACN)

Airport Coordination Norway AS is a registered limited company under Norwegian private law. Airport Coordination Norway Ltd is a non-profit company in charge of slot allocation for Oslo-Gardermoen, Stavanger, Trondheim, Bergen airports, Trondheim Airport, and schedule facilitation for Kirkenes airport.

### Members

The stocks are owned 50% by coordinated airports and 50% by Norwegian licensed scheduled air carriers. The Board has representatives from airport operators Avinor and Oslo Airport, as well as the airlines SAS and Norwegian Air Shuttle.

### Funding Scheme

50% from Avinor and Oslo Airport and 50% from Norwegian licensed scheduled airlines based on number of slots they own.



airport for Norway, and is the second-busiest airport in the Nordic countries. Being a hub for Scandinavian Airlines and Norwegian Air Shuttle, and a focus city for Widerøe, it connects to 28 domestic and more than 100 international destinations. The number of passengers: 22,912,213 (+3.9% compared to 2012) – the number of movements: 243,092 in 2013, making Oslo Airport the nineteenth busiest airport in Europe.

The airport is connected to the city center by the high speed railway Gardermoen Line served by mainline trains and Flytoget. The ground facilities are owned by Oslo Lufthavn AS, a subsidiary of the state owned Avinor. Also at the premises is Gardermoen Air Station, operated by the Royal Norwegian Air Force. An expansion with a new terminal building and a third pier is scheduled to open in 2017. Oslo Airport is the largest and busiest of three major international airports located around Oslo. The others are Torp in the southwest and Rygge in the southeast.

The airport location was first used by the Norwegian Army from 1740, with the first military airport facilities being built during the 1940s. The airport remained a secondary reserve and airport for chartered flights to Oslo Airport, Fornebu until 8 October 1998, when the latter was closed and an all-new Oslo Airport opened at Gardermoen, at the expense of 11.4 billion Norwegian kroner (NOK).

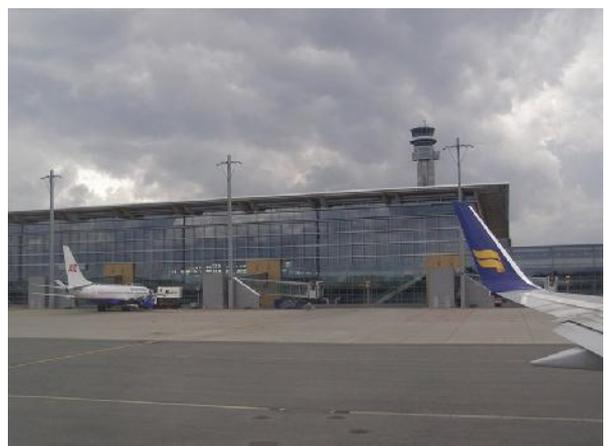
#### Airport Infrastructure

The airport covers an area of 13km<sup>2</sup> and is based on the Atlanta model, with two parallel runways and a single terminal with two piers on a single line. It has two open parallel runways: the runway (01L/19R) is 3,600m and the runway (01R/19L) is 2,950m. Non-commercial and practice general aviation is not operated at Oslo Airport, and is mainly done from Kjeller Airport, Rakkestad Airport and Tønsberg Airport, Jarlsberg.

#### Terminal Building

The passenger terminal covers 148,000m<sup>2</sup> and is 819m long. The terminal area has 52 aircraft parking stands, of which 34 are connected with bridges and 18 are remotely parked. Gates for domestic flights are located in the west wing, while gates for international flights are in the east, with gates for non-Schengen flights at the very end of the wing. Three of the gates closest to the terminal are "flexigates" for both domestic and international Schengen flights, another four gates near the end of the east wing are flexigates for both Schengen and non-Schengen flights.

The current capacity of 23 million will soon be passed; in 2013, 22.9 million passengers used the airport. The airport is "silent", so announcements for flights are only done in the immediate vicinity of the gate. There is a



playground in both the domestic and international sections, and a quiet room in the domestic section. Medical personnel are stationed at the airport.

Because of the airport's customs procedures for connecting passengers (the luggage has to be picked up, shown to customs and checked in when connecting from international to domestic flights), some transit passengers are now avoiding Oslo Airport and finding other routing options when possible. The process of clearing customs before connecting to a domestic flight is however not unique for Oslo Airport, but common all over the world.



About half of the airport operator's income is from retail revenue. There are twenty places to eat or drink, in addition to stores and other services including banks. In all, 8,000m<sup>2</sup> are used for restaurants, stores and non-aviation services. The departure duty free shop is 1,530m<sup>2</sup> and the largest in Europe. The shop is located in front of the international concourse, taking up a large part of the terminal's width. Arriving passengers have access to a smaller duty free shop in the baggage claim area.

In addition to the main terminal, the airport operates its own VIP terminal for the Norwegian Royal Family, for members of the Norwegian government and members of foreign royal families and governments. The GA terminal, located on the west side of the airport, services cargo airlines, executive jets and ambulance aircraft. The airport is heated using district

heating with a geothermal source. The airport uses 32.6 GWh/year for heating and 5.6 GWh/year for cooling. In addition, the airport uses 110 GWh/year of electricity.

## Stavanger Airport, Sola (SVG)

Stavanger Airport, Sola (IATA: SVG, ICAO: ENZV) is an international airport located serving Stavanger, a city and municipality in Rogaland county, Norway. The airport is located 11km southwest of Stavanger, in the municipality of Sola. It is Norway's third busiest airport, with both fixed wing aircraft and helicopter traffic for the offshore North Sea oil installations. In addition, the Royal Norwegian Air Force operates Westland Sea King search and rescue helicopters from Sola Air Station.

The number of passengers: 4,657,155 (+5.7% compared to 2012) - the number of movements: 87,352 in 2013. Five airlines offered domestic flights to nine destinations



while eleven airlines offered international flights to 37 destinations. Two helicopter companies operate out of Sola. The busiest route is Sola-Oslo Gardermoen, which has about 28 daily flights. In the vicinity of the airport there is an aeronautical museum, Flyhistorisk Museum, Sola.

### Airport Infrastructure

The airport has two crossing runways: the main runway, north/south (18/36) and the main runway for helicopters, which is oriented northwest-southeast (11/29). The main runway (18/36) measures 2,556m by 60 m and the runway (11/29) is 2,449m by 45m. The two airstrips cross each other, but since they have a different orientation, they could never operate as individual runways. The orientation will however allow aircraft to take off and land even with heavy wind from east or west.

### Terminal Building

Stavanger Airport has two passenger terminals, one for airplanes and one for helicopters. When the present terminal was put into use 28 January 1987, it was the first airport in Norway to have skybridges, nine in total. The old terminal was then converted into a heliport.

Expansion of the airplane terminal took place in 2009. The new gates were built without jetbridges. The airport's two largest airlines, SAS and Norwegian Air Shuttle, showed little interest in such amenity and desired quicker turnaround times. SAS though later said that they did want jetbridges for their larger jet aircraft, and only wanted gates without jetbridges for their smaller turboprop aircraft. Avinor decided not to build jetbridges.

## Bergen Airport, Flesland (BGO)

Bergen Airport, Flesland (IATA: BGO, ICAO: ENBR) is an international airport located at Flesland in Bergen, a city and municipality in Hordaland county, Norway. Opened in 1955, it is the second busiest airport in Norway; the number of passengers: 6,047,615 (+7.4% compared to 2012) - the number of movements: 106,225 in 2013. Flesland is operated by the state owned Avinor. Until 1999 Flesland Air Station of the Norwegian Air Force was co-located at the airport.

Nineteen scheduled airlines operate to nineteen domestic and thirty four international destinations; ten more are provided through regular charter services. Scandinavian Airlines (SAS), Norwegian Air Shuttle and Widerøe are the largest airlines operating at the airport. The route to Oslo Airport, Gardermoen is among the busiest in Europe. A



substantial traffic is generated by CHC Helikopter Service and Bristow Norway to offshore oil platforms in the North Sea. High frequency international feeder services are provided by SAS to Copenhagen, KLM to Amsterdam, Lufthansa to Frankfurt and British Airways to London.

Originally Bergen was served by water aerodromes at Flatøy, Sandviken and Herdla. Financing of Flesland was largely secured through NATO funds and the airport opened on 2 October 1955. Until the 1980s, Bergen was the Norwegian airport used for SAS' intercontinental flights to New York. A new terminal opened in 1988. The terminal is too small for today's traffic. A new terminal is scheduled for completion in 2016, by which time Bergen Light Rail will have been expanded to the airport.

### Airport Infrastructure

The airport has a single 2,990m by 45m runway numbered 17/35 (roughly north south). The runway has 7.5m shoulders on each side and has 2,450m between the touchdown points. The runway has a parallel taxiway (Y), with nine intersections. There is also a taxiway further in along between the terminal and technical area (W). There are six intersections between W and Y, one of which leads to the military area. There is instrument landing system (ILS) category I on both directions. The runways have a capacity of maximum 30 movements per hour.



The runway, main taxiway and all areas to the north of the civil aviation area are owned by the military. Flesland Air Station no longer has stationed aircraft, but there is activity in several of the military installations. Flesland is occasionally used during exercises. The military has indicated that it may choose to sell its estate at the airport in the future. Avinor and the military have initiated a process that may result in the runway and taxiway being transferred to Avinor ownership.

### Terminal Building

The main terminal covers an area of 21,000m<sup>2</sup>, of which 14,200m<sup>2</sup> is used for passenger areas. The terminal has reached its capacity for simultaneous passengers, and especially security, check-in, arrival hall and baggage handling have limited space.

All passengers traveling on international flight must pass through the duty free shop in order to get to their flight. There is a possibility for some passengers (for example, those allergic to perfume) to ask security to use a narrow corridor which bypasses the shop. Nonetheless, the layout has been criticized by teetotalism organizations. The airport's response is that the layout was needed due to the terminal's small size.

All eleven terminal gates have jet bridges, numbered 21 through 30 and 32. The terminal is constructed so that all can be used for domestic traffic, but if Gate 21 is used for domestic, all others must too. In ordinary use, 21 and 22 are used solely for international traffic, 23 through 27 are used for either, and 28 through 32 are used solely for domestic. Gate 21 and 23 can be used both for Schengen Area and non-Schengen flights, while Gate 22 is solely used for non-Schengen. Gate 24 has the largest parking space and can take category E aircraft (such as the Airbus A340 and Boeing 747), the rest are category C (such as Boeing 737 and Airbus A320), although gates 21 and 22 are slightly larger and can handle the Boeing 757. There are a further 21 remote parking places on the apron.

The helicopter terminal is located in the old terminal from the airport's opening and covers an area of 8,030m<sup>2</sup>. There are nine helicopter stands, of which six are outside the terminal building. The control tower is next to the helicopter terminal and has an area of 160m<sup>2</sup>. It lacks visual sight lines to stands south of the terminal, the de-icing and parts of the taxiway. Nearby is the fire station; the 2,850m<sup>2</sup> building is also used for offices. There are a series of other hangars and buildings at the airport, owned by various airlines, ground handling companies, aviation clubs and general aviation companies.

## Trondheim Airport, Værnes (TRD)

Trondheim Airport, Værnes (IATA: TRD, ICAO: ENVA) is an international airport serving Trondheim, a city and municipality in Sør-Trøndelag county, Norway. The airport is located in Værnes, a village in the municipality of Stjørdal in Nord-Trøndelag county, 19km east of Trondheim. Operated by the state owned Avinor, it shares facilities with Værnes Air Station of the Royal Norwegian Air Force. The number of passengers: 4,305,122 (+3.6% compared to 2012) - the number of movements: 60,830 in 2013, making it the fourth busiest in the country.

The main airlines at the airport are Scandinavian Airlines (SAS), Norwegian Air Shuttle and Widerøe, for all of which Værnes is a focus city. The main route is the service to Oslo, operated by both SAS and Norwegian, which is the tenth busiest route in Europe. Both airlines operate services also using Boeing 737 aircraft to Bergen, Bodø and Tromsø; SAS has some additional domestic services while Norwegian has a number



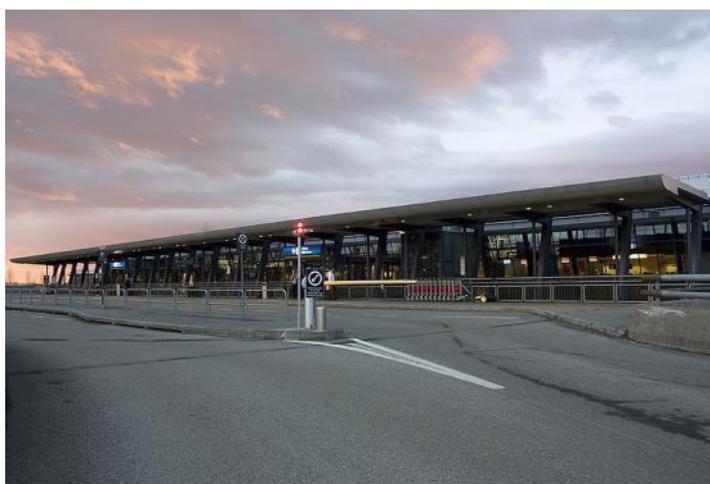
of low frequency international services. Widerøe operates regional Dash 8 aircraft to six airports in Helgeland, in addition to Sandefjord. Daily international services to Copenhagen are provided by SAS and to Amsterdam are provided by KLM. The airport also serves charter services, mainly to the Mediterranean.

## Airport Infrastructure

The airport features a main east-west (09/27) 2,999m runway, a disused northwest southeast 1,472m runway, an integrated railway station and an airport hotel. The airport has two terminals; Terminal A dates from 1994 and is used for domestic traffic, while Terminal B is the renovated former main terminal from 1982, and is used for international traffic.

## Terminal Building

The civilian sector consists of two terminals A and B which combined are 20,000m<sup>2</sup>, of which 13,500m<sup>2</sup> is passenger facilities. Terminal A is used for domestic traffic, while Terminal B is used for international services. Both terminals have common check in facilities as well as a common security control area. The terminal contains an array of stores and dining places; these include a book store, convenience stores (including Narvesen and 7-Eleven), clothing, crafts and cosmetics; diners, restaurants and pubs; and a 560m<sup>2</sup> duty free store.



The terminal has stands for 18 aircraft, of which seven at Terminal A have jetbridges. Two stands (one at each terminal) is size code D (large enough for an Airbus A330 or a Boeing 757), while 11 are for size category C (large enough for an Airbus A320 or Boeing 737). Fourteen of the stands are large enough for commercial traffic. Domestic jets normally use the seven jetbridge stands (gates 31–37), while the two non-bridged gates at Terminal A (gates 38–39) are used for domestic regional aircraft. International flights all use the five non-bridged gates at Terminal B. The Air Force has six stands for military freight planes up to the size of a Lockheed C-5 Galaxy (code F), although one is permanently used for deicing.

## Kirkenes Airport, Høybuktnoen (KKN)

Kirkenes Airport, Høybuktnoen (IATA: KKN, ICAO: ENKR) is an international airport located at Høybuktnoen, 15km west of the town of Kirkenes, in the municipality of Sør-Varanger, Finnmark county, Norway. Operated by the state owned Avinor, the airport has a single 2,115m by 45m asphalt runway numbered 06/24. Scandinavian Airlines and Norwegian Air Shuttle operate Boeing 737 services to Oslo Airport, Gardermoen, in part generated by Høybuktnoen's function as a hub for Widerøe's regional services to other airports in eastern Finnmark. There are also summer charter flights to Central Europe to bring tourists to the Hurtigruten cruises. The number of

passengers: 292,640 (as 2012) - the number of movements: 6,477.

Trondheim Airport Høybuktnøen was built as a military air station by the Luftwaffe during World War II. Civilian services were introduced after the war, but abandoned in 1948. The airport reopened in 1963 with a new terminal and an extended runway. Originally the airport was served by Scandinavian Airlines System and Finnair, and from the 1970s also Widerøe and Norving. Since 1990, five airlines have attempted to provide services to Murmansk, Russia.



### Airport Infrastructure

Originally the airport had two runways, 1,600 and 1,200m long, respectively, but the smaller was closed in 1996 when the longer was extended. A new terminal building was put into use in 2006. Because of the terrain the runway's length cannot be exploited under some wind conditions, so there is a proposal to level some of the land. The runway is located southwest northeast (06/24) and is 2,015m by 45m. The touchdown zone from the west is 60m from the start of the runway, while it is 420m from the east. There are no parallel taxiways, but two taxiways run from the runway to the tarmac. Because of the terrain to the east the maximum take-off lengths on the runway vary depending on the direction: it is only 1,605m from the east compared to 1,755m from the west. Runway 24 is equipped with instrument landing system. There is also a closed runway located normally to the main runway (14/32). It is 1,270m long and gravel; part of the length has been paved and is used as a taxiway.

### Terminal Building

The terminal has place for six category C aircraft (Airbus A320/Boeing 737). During summer the airport experiences a very high traffic peak with both scheduled and charter aircraft arriving at the same time, as both intend to correspond with Hurtigruten; this causes patronage to rise beyond the airport's capacity. Kirkenes Airport had a revenue of NOK 26.4 million in 2009, of which commercial income made up 15 percent, and an operating deficit of NOK 45.4 million. The deficit is cross subsidized by profits at Avinor's largest airports.



The airport is located next to European Road E6. Boreal Transport operates an airport coach service from Kirkenes to the airport in connection with all arrivals and departures. The company also serves the airport with coach services from Kirkenes to other parts of Finnmark. Bus services are also operated to and from Murmansk, Russia to correspond with

all scheduled flights to and from Oslo. Parking, taxis and car rental is available at the airport.

### Our computer system for coordination

ACN uses Score Airport Capacity Management System for the coordination process and we are also connected to the Online Coordination portal (OCS). Score system is working on a “Common Slot Server” used by Denmark, Faroe Islands, Finland, Iceland, Sweden and Norway.

### Introduction of our members

	
Mr. Fred Andreas Wister (Head Coordinator)	Mr. Tomas Eriksson (Coordinator)

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From the Chief Editor

I would like to express my sincere appreciation to Mr. Fred Andreas Wister for providing us with very informative article. I noticed that Norway stretches from north to south with narrow land which is quite similar to Japan. No wonder, Air transportation is quite vital and extensive for Norway, so as to Japan. The air transportation network is quite extensive although there is extensive railway network including bullet train in Japan. However, if the travel time is less than 2 hours between cities by train, air transportation cannot compete with railway. This is a limit of air transportation.

I also learnt that there are limited passenger and cargo services between Norway and Asian countries. There should be more flights from Japan to Norway since Japanese love seafood.



Having finished this issue, I should rush to park to appreciate Sakura bloom. It is very common to drink and eat under the Sakura tree in Japan. Some people bring “Karaoke” set to sing songs under the Sakura. You may feel Japanese are crazy to drink and sing in open areas. But it’s fun. Come to Japan to appreciate Sakura. Sakura bloom front is moving north now. You can enjoy it till May if you move northward. (H.T.)

