

# FocusAirport



Putting major hubs in the spotlight

July/August 2013



## Schiphol

IATA Code: AMS; date opened 1916 (as military airbase), Pax in 2012: 50.98 million

### The Amsterdam hub airport continues to show an appetite for innovation.

**Frits Nijjo and Ben Vogel report**

**S**chiphol has come a long way from 1967, when its existing terminal was inaugurated and annual passenger capacity was just 6 million. It is the main aviation gateway in the Netherlands, fed by regional subsidiaries such as Rotterdam The Hague and Eindhoven airports.

More intriguingly, it is also positioning itself as the 'fourth London airport', siphoning transfer passengers from the capacity-constrained and tax-burdened airports in the south east of the United Kingdom. This strategy is its early stages, but it may become more significant if the UK aviation sector fails to deliver an adequate means of unlocking capacity.

#### New masterplan

Schiphol passed a landmark in 2012 with completion of its EUR800 million (USD1 billion) 70MB programme to raise annual baggage-handling capacity from 50 million to 70 million items. Vanderlande partnered with Schiphol Group, KLM and IBM on the project.

Schiphol Group President and CEO Jos Nijhuis understands that standing still is not an option – despite the continuing economic problems affecting Europe, the airport must press on and improve its infrastructure if it is to prosper in the future.

To that end, a Master Plan 2025 is being drawn up to deliver extra capabilities, at a cost of EUR3 billion. Schiphol Group has full support for the first

phase of the Master Plan from its major stakeholders: KLM and the Board of Airline Representatives in the Netherlands (BARIN). "Every three years we will align all necessary investments together with our stakeholders," said Nijhuis.

Until 2020 Schiphol will invest EUR1 billion in terminal infrastructure improvements. Major projects in this area include EUR350 million new centralised security control area and a EUR350 million A Pier with 10 contact gates.

Elsewhere, Schiphol Real Estate subsidiary Schiphol Hotel Property Company will launch the construction of a new landmark hotel, to be managed by Hilton Worldwide, with 443 rooms, 23 conference rooms, executive lounges and a ballroom accommodating 600 people. Schiphol Group CCO (Chief Commercial Officer) Maarten de Groof commented: "The new hotel will replace the existing Hilton hotel and is scheduled to open for business [in] mid-2015." The cube-shaped hotel building is designed by Dutch architecture practice Mecanoo. UK-based Hirsch Bedner Associates (HBA) will carry out interior design.

#### A Pier

"We spent much time investigating the best expansion solutions at Schiphol," Nijhuis commented. "One of the options was to build a new second terminal opposite Highway A4 near our newest Polderbaan runway [18R/36L 3,800 x 60 m]. Buses or people movers between the

terminals would transport passengers. This option did not make it: we continue to keep our one-terminal concept."

Schiphol is creating an entirely new A Pier, which is scheduled to become operational by 2016. The new facility will have limited check-in and arrival facilities, and is earmarked to be built near the end of Pier B.

"This new A Pier will add 2.5 to 3 million annual passengers to our capacity," Nijhuis said. It will be connected to the adjacent Pier B by a temporary pedestrian bridge – ultimately, A Pier will have its own permanent access to the terminal building.

The new pier will be used by airlines for short-haul operations within Europe. "KLM and its Skyteam partners are primarily located at Departure Halls 1 and 2, the airport's busiest area," Nijhuis noted. "A Pier adds more capacity, where KLM and its partners are able concentrate their operations within one single area," Nijhuis stated.

The flexible modular design structure of A Pier is an important feature. "Either the new pier or extensions for check-in facilities will be modular [built] and easy to expand. We want to reduce disinvestment risks as much as possible," Nijhuis explained.

However, subsequent phases of the Master Plan include the provision of a second and third pier on sites currently occupied by the KLM cargo centre and catering facilities. ■



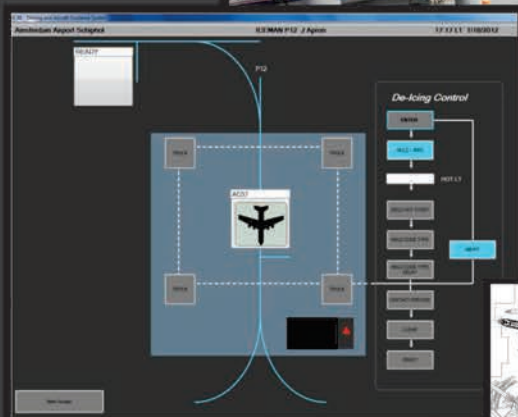


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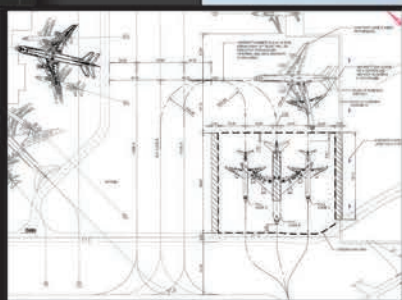
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Traffic

50.98 M

passenger traffic 2012

ARFF vehicles

E-One

Cargo

1.48 M

cargo tonnage  
2012

3

terminals  
(in one main  
building)

FocusAirport  
At a glance  
Amsterdam

24

cargo-only routes

Movements

423,407

aircraft movements 2012

Destinations

317

direct destinations

Remote runway  
surveillance

Searidge

5

main runways  
(6 in total)

Planning/design/construction services



Passenger boarding  
bridges

Shenzhen  
CIMC-TianDa

Electronic message boards



Terminal area

650,000 m<sup>2</sup>

Airside driver training  
simulator

Vstep

Integrated screening software



Airport surface area

2,787 ha



# Schiphol stands its ground

## > ACI's preliminary rankings for 2012

place Schiphol as the 16th busiest airport worldwide – and number 4 in Europe, behind Heathrow, Paris Charles de Gaulle and Frankfurt – by passenger numbers. Its market share compared with these European rivals dropped slightly, from 10.9% to 10.7%

Passenger traffic at Schiphol increased by 2.6% in 2012 to 50.98 million. With the expansion programmes in place at the airport, by 2020 annual passenger volume could increase to 62 million. Nijhuis predicts that Schiphol will be capable of handling up to 75 million passengers by 2025.

The six runways at Schiphol handled a total of 423,407 take-offs and landings in 2012, a year-on-year increase of 0.8%. Cargo volume dropped by 2.6% to 1.48 million tonnes but market share grew marginally (0.1%) to 13.9%, making Schiphol the third busiest European cargo airport behind Frankfurt and Charles de Gaulle.

Financially, Schiphol Group saw a 5.8% increase in revenues in 2012, while EBITDA grew by 4.4% despite a 2.5% drop in operating profits – Nijhuis described this as a “solid result”, all the more commendable given the economic uncertainty prevailing

in Europe. Net profits rose by 2.2%, and the return on equity remained unchanged at 6.2%.

## Adding value

For its growing number of Chinese passengers, Schiphol and its partner

Aéroports de Paris developed a smartphone app in Mandarin-Chinese language to lead them to Schiphol and Charles de Gaulle airports. Another invention is Schiphol's ‘waving goodbye’ app, which friends and family can use to wave passengers off on Schiphol's Facebook page. ■

## Traffic evolution at Schiphol Airport, 2008-12

	2008	2009	2010	2011	2012
Passengers (million)	47.39	43.52	45.14	49.68	50.98
Cargo (million tonnes)	1.57	1.29	1.51	1.52	1.48
Aircraft movements	428,336	418,742	386,316	420,349	423,407

Source: Schiphol Group

## Schiphol financial performance, 2012

	2012	2011	% change
Revenues (billion)	1.35	1.28	5.8
EBITDA (million)	534	512	4.4
Operating profits (million)	296	304	-2.5
Net profits (million)	197	198	-0.5
Earnings per share	1,068	1,045	2.2
Total assets at year-end (billion)	5.79	5.73	1.0
Return on equity (%)	6.20	6.20	

Source: Schiphol Group. All figures are in EUR

## Schiphol's position as a global hub

Ranking	Airport	Country	Total passengers (million)	Change
1	Hartsfield-Jackson Atlanta	US	95.46	3.30%
2	Beijing Capital	China	81.93	4.10%
3	London Heathrow	UK	70.04	0.90%
4	Tokyo	Japan	66.80	6.70%
5	O'Hare	US	66.63	0.10%
6	Los Angeles	US	63.69	3.00%
7	Paris Charles de Gaulle	France	61.61	1.10%
8	Dallas-Fort Worth	US	58.60	1.40%
9	Jakarta Soekarno-Hatta	Indonesia	57.78	12.10%
10	Dubai	UAE	57.69	13.20%
11	Frankfurt	Germany	57.52	1.90%
12	Hong Kong	China	56.05	5.10%
13	Denver	US	53.16	0.60%
14	Suvarnabhumi	Thailand	53.00	10.60%
15	Singapore Changi	Singapore	51.18	10.00%
16	<b>Amsterdam Schiphol</b>	<b>Amsterdam</b>	<b>50.98</b>	<b>2.60%</b>

Source: ACI preliminary full-year figures, Schiphol Group

## Schiphol's position as a European hub

Ranking	Airport	Country	Total passengers (million)	Change
1	London Heathrow	UK	70.04	0.90%
2	Paris Charles de Gaulle	France	61.61	1.10%
3	Frankfurt	Germany	57.52	1.90%
4	<b>Amsterdam Schiphol</b>	<b>Amsterdam</b>	<b>50.98</b>	<b>2.60%</b>
5	Madrid Barajas	Spain	45.18	-9.00%
6	Istanbul Ataturk	Turkey	45.12	20.60%
7	Munich	Germany	38.36	1.60%
8	Rome Fiumicino	Italy	36.98	-1.98%
9	Barcelona	Spain	35.14	2.20%
10	Gatwick	UK	34.23	1.70%





The new central security zone is a crucial part of Schiphol Group's Master Plan 2025.

Schiphol Group, 1489902

## Re-aligning security

**> Work is already under way on the new centralised security checkpoint.** The initial focus is on making changes to the departure halls and piers in the non-Schengen area, as an essential prerequisite to channel passengers to the central security control zone.

“Our transition to a central security control area will mean a reduction in the number of required security checkpoints from 110 to 50,” Nijhuis said, “and security staff could be used more efficiently. For our airlines this means time gains and for our

passengers more convenience.”

To create room for this change, an additional floor will be constructed on Piers E, F and G, while existing floor space will be redesigned to accommodate security control filters. This will allow Schiphol to separate arriving and departing passengers in the non-Schengen area.

Airport management aims to speed up passenger flows through the checkpoint, creating “a future-proof security system that is robust and flexible enough to meet current and future demands”, Ron Louwerse,

director of safety, security and environment at Schiphol, told *IHS Jane's* earlier in 2013. The planned new centralised, one-stop system would ensure that the security process no longer hinders airline on-time performance. It would also add the capacity to accommodate changing market dynamics and new legislation.

Airport officials aim to have implemented Central Security in the non-Schengen area by the second quarter (2Q) of 2015 – and the ultimate ambition is to create centralised security for the entire airport. Indeed, Louwerse said, innovation in the way security is handled at Schiphol “will still continue after 2Q 2015”. ■

## A vision of the future

**> A Dutch consortium called iPort,** which includes Schiphol Group, VolkerWessels, Imtech, NACO and Rau Architects Amsterdam, have developed a completely new airport concept called iPort.

The main objective of iPort is to shorten turnaround times, and to economise on equipment and staff.

Today the average turnaround time for an aircraft at a conventional pier is around 60

minutes. In its search for the solution to this problem, the team looked beyond aviation – it studied how McDonalds processes drive-through customers in a sequential turnaround system, for example.

The iPort concept is circular, sequential and capable of cutting turnaround times to 40 minutes, thereby enabling 50% more turnarounds.

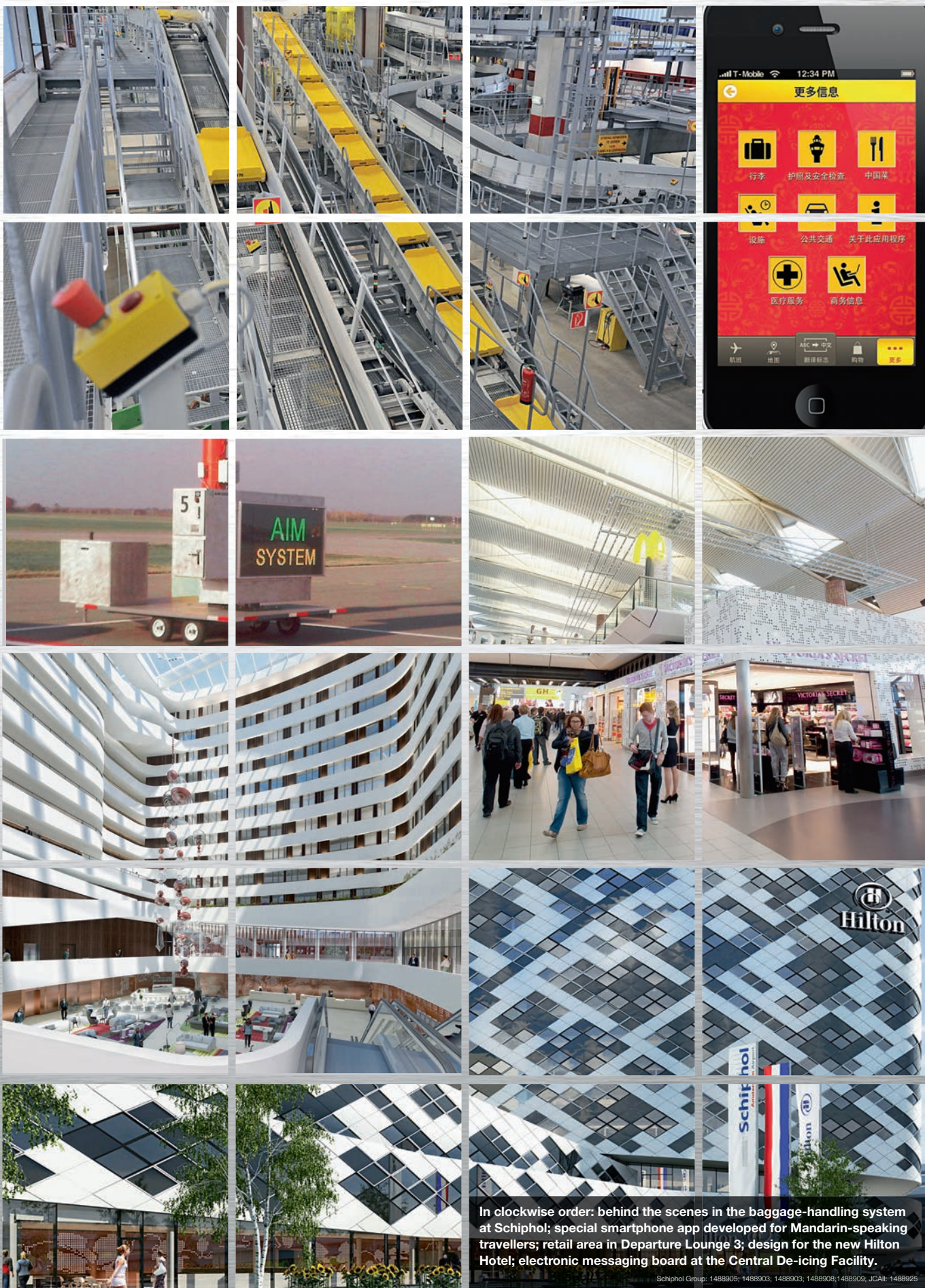
Another advantage is a shorter walking distance for passengers from gate to aircraft

(117 m in a conventional linear pier from gate to aircraft versus 65 m in the circular iPort). The iPort covers a footprint that is 40% smaller than a traditional airport pier.

Equipment requirements can be cut by as much as 85% – whereas a conventional airport pier needs up to eight sets of mobile equipment for each gate, iPort demand just one.

Airport operators would also save on manpower costs by requiring a single ground-handling team instead of one per gate. ■







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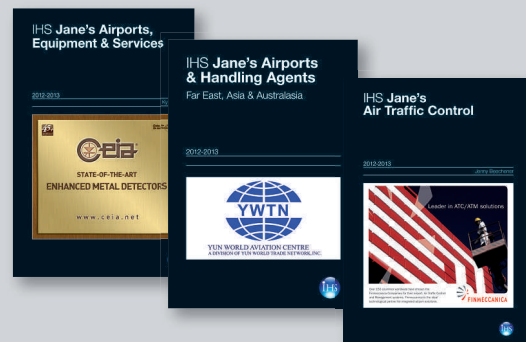
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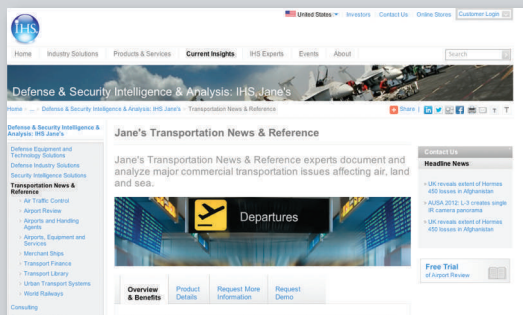
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# Specialist staff deliver winter solace

> **Schiphol employs professional snow squads** that minimise the effects of snow and ice on air traffic. The airport has more than 100 specialist winter service vehicles at its disposal.

The fleet includes snow ploughs, snow blowers and spraying vehicles for the runways and taxiways; and shovels,

snow blowers and spraying vehicles for the aircraft stands.

There are also cranes for loading the snow onto huge trucks and trucks with sufficient capacity to transport enormous loads of snow, as well as small and large snow ploughs and gritting vehicles for public roads, car parks and bicycle paths. A total of

450 specialists work around the clock.

The winter services fleet at Schiphol was reinforced in February 2013 with the arrival of six new runway de-icer sprayers from Dammann. The new sprayers will replace older vehicles in a phased process.

At around the same time, the airport brought into service a combination spreader from Epoke which uses potassium formate and sand.

Schiphol has been using potassium formate for runway de-icing since 2011, as an environmentally friendlier alternative to potassium nitrate.

In 2012 Schiphol bought a single Dammann vehicle for EUR300,000 (USD387,000) to evaluate its capabilities.

The vehicle has a spraying width of 40 m. The sprayer arms are fitted with LED lighting to ensure safe operation in poor visibility or at night.

A key feature of the Dammann runway de-icer vehicles is the use of DGPS software, which allows them to accurately detect areas that have already been sprayed.

As soon as the operator drives across a section that has already been sprayed, the nozzles will be switched off automatically.

They will start spraying again as soon as the vehicle exits the sprayed area.

## EMBs for the CDF

In February 2012, the Airfield Intelligence Management (AIM) electronic messaging board (EMB) system from AIM Systems was introduced into service in Schiphol at four primary remote de-icing pads operated by KLM. AIM is an LED-based visual guidance system for communication and standard messaging for flight crews, particularly to ensure safety and efficiency during 'engines-on' de-icing at remote pads.

The installation at Schiphol's Central De-icing Facility (CDF) comprises five permanent EMBs, one directory board near the entry to the de-icing station, and four de-icing boards at the exit of each pad to assist in holding aircraft during the de-icing process.

The EMBs were implemented by Jeff Campbell and Associates International. This was the first installation of fixed EMBs in Europe and was based on a system in use at Toronto Pearson and Vancouver international airports in Canada. ■

Potassium formate is used for runway de-icing at Schiphol (seen here is a de-icing fluid tank on a Dammann runway de-icer at Schiphol).

