

TSUG

Transport Statistics UsersGroup

Monthly Review: July 2017

This month's review has shown that a record number of 959,000 vehicles were registered in the first quarter for the first time in UK. According to ACI, Amsterdam's Schiphol has overtaken Heathrow as Europe's largest airport for direct flights. Polish State Railways are successfully using drones to monitor freight trains substantially reducing the thefts of cargo. One point to be noted is that DfT is no longer publishing main casualty figures in June, ahead of the full figures due in September. We've also got Kit Mitchell's Statistics Digest.

Dr Shanta Bir Singh Tuladhar, Calum Leslie and Andrew Sharp

Contents

Dates of the next TSUG seminars.....	3
Statistics Digest.....	3
General News	5
Container Handling Record for Savannah.....	5
Power Generating Pavements	5
Rail.....	6
Drones Reduce Rail Cargo Theft.....	6
Israel Railways 2040 Strategic Plan.....	6
New State-owned Company to take over Danish Rolling Stock Procurement .	7
NS to Change Traction?	8
Toronto – Windsor High Speed Rail.....	9
Fly Quiet and Clean.....	11
Recent IATA Statistics	13
It depends on how you measure it!	15
Norwegian Air Shuttle Statistics.....	15
The Cost of Going Green.....	16
Too Hot to Fly	17
Road	17
The Rising Cost of Bike Crashes	17
Miami-Dade County Public Transport Statistics	18
A Profile of Ride Hailing in San Francisco.....	19
Vehicle Licensing Statistics Q1, 2017	20

Dates of the next TSUG seminars

Date	Venue	Topic
Wed-19-July	TfL	Ground Access to Airports & Traffic Distribution

The seminars can be booked through the TSUG website at www.tsug.org.uk/seminars.php

Statistics Digest

STATISTICS DIGEST July 2017

This digest lists major sets of statistics that have been released recently or which are due to be released. Regular monthly and quarterly releases are not included. The web links given allow free downloads of the documents cited.

Recent releases from Department for Transport

Recent releases from Department for Transport	
14 June	Search and rescue helicopter statistics: year ending March 2017 https://www.gov.uk/government/statistics/search-and-rescue-helicopter-statistics-year-ending-march-2017
20 June	Domestic waterborne freight: 2015 (revised) https://www.gov.uk/government/statistics/domestic-waterborne-freight-2015
29 June	Vehicle speed compliance statistics for Great Britain: 2016 https://www.gov.uk/government/statistics/vehicle-speed-compliance-statistics-for-great-britain-2016
29 June	Light rail and tram statistics: year ending March 2017 https://www.gov.uk/government/statistics/light-rail-and-tram-statistics-england-year-ending-march-2017

Forthcoming releases from Department for Transport	
13 July	Journey time statistics: 2015 (revised) https://www.gov.uk/government/collections/journey-time-statistics
13 July	Road freight statistics: 2016 https://www.gov.uk/government/collections/road-freight-domestic-and-international-statistics
27 July	Rail passenger numbers and crowding on weekdays in major cities in England and Wales: 2016 https://www.gov.uk/government/collections/rail-statistics
27 July	National Travel Survey 2016 https://www.gov.uk/government/collections/national-travel-survey-statistics
3 August (provisional)	Renewable Transport Fuel Obligation: Year 9 (2016 to 2017) report 4 (15 April 2016 to 14 April 2017 supply) https://www.gov.uk/government/collections/biofuels-statistics
3 August	Reported Road Casualties in Great Britain: 2016 provisional estimates for accidents involving illegal alcohol levels https://www.gov.uk/government/collections/road-accidents-and-safety-statistics
August	Air passenger experience of security screening: 2016 https://www.gov.uk/government/collections/aviation-statistics

Forthcoming releases from Department for Transport	
August	British social attitudes survey: 2016 https://www.gov.uk/government/collections/statistics-on-public-attitudes-to-transport
September	Provisional road traffic estimates, Great Britain: July 2016 to June 2017 https://www.gov.uk/government/collections/road-traffic-statistics
September	Travel time measures for local 'A' roads, England: July 2016 to June 2017 https://www.gov.uk/government/collections/road-congestion-and-reliability-statistics
September	Travel time measures for the strategic road network: July 2016 to June 2017 https://www.gov.uk/government/collections/road-congestion-and-reliability-statistics
September	Taxi and private hire vehicles statistics, England: 2017 https://www.gov.uk/government/collections/taxi-statistics
September	Local area walking and cycling in England: 2015 to 2016 https://www.gov.uk/government/collections/walking-and-cycling-statistics
29 Sept	Reported road casualties Great Britain, annual report: 2016 https://www.gov.uk/government/collections/road-accidents-and-safety-statistics

An email has been received from Stephen Reynolds, forwarding a statement from Tricia Hayes on the Main Road Casualty data, which had been due to be published on 29th June.

“Apologies for the direct approach but I wanted to get in touch to put the record straight on the reason for the delay in publishing our 2016 Road Casualty Data. I’m aware that there has been some speculation, including in Local Transport Today, that this is down to issues arising from implementation of our CRASH accident reporting system.

In fact the reality is that we can’t publish this data because we are currently lacking validated data from the Metropolitan Police for November and December. As Met data makes up around 15% of our road casualty data this made publication this month impossible.

We’re working hard with TfL and the Met to put this right but in the mean time I thought it was important for you as a key road safety stakeholder to fully understand the reason for the delay.

If you’ve got any questions on this then do follow up with Stephen Reynolds in our statistics team Stephen.Reynolds@dft.gsi.gov.uk

Tricia Hayes”

Recent national and international releases	
June	Key Reported Road Casualties Scotland 2016 https://www.transport.gov.scot/media/39307/sct05174402361.pdf
29 June	Police recorded road accidents in Wales, 2016 http://gov.wales/docs/statistics/2017/170629-police-recorded-road-accidents-2016-

en.pdf	
31 March	Police Recorded Injury Road Traffic Collision Statistics Northern Ireland Key Statistics 2016
https://www.psni.police.uk/globalassets/inside-the-psni/our-statistics/road-traffic-collision-statistics/2017/2016-detailed-trends-report--annual-bulletin---published-30th-june-17.pdf	
April	Swedish National Travel Survey 2015-16
http://www.trafa.se/globalassets/statistik/resvanor/rvu-sverige-2016.pdf	
June	UN ECE 2017 Inland Transport Statistics for Europe and North America
https://www.unece.org/fileadmin/DAM/trans/main/wp6/publications/2017_INLAND_TRANSPORT_STATISTICS.pdf	

Members can find past seminar slides here: http://www.tsug.org.uk/past_seminars.php

General News

Container Handling Record for Savannah

Edited from an article in Railway Age

[Georgia Ports Authority](#) handled a record 350,104 twenty-foot equivalent units (TEUs) in May 2017, a gain of 11.68% from the same month a year ago. The authority said that this was due to larger vessels transiting the newly expanded Panama Canal and additional container services coupled with a positive economic forecast.

Garden City Terminal, the fourth largest container port in the US, received 1,676 vessel calls between July 2016 and May 2017, of which 454 used the expanded Panama Canal. This led to a 16% increase in throughput for that route during that time.

The port has seen recent calls of Ultra Large Container Carrier vessels of more than 12,000 TEUs, including the Cosco Development and OOCL France.

Garden City moved than 19,000 TEUs from the two 13,000-plus ships, which called the Port of Savannah just 21 days apart.

In April, some shipping lines realigned to form new alliances, and 35 weekly container services now call at Garden City Terminal, which the authority said is more than any other port on the U.S. East Coast.

Power Generating Pavements

Every footstep produces about 3 joules of energy – enough to keep a low-power LED lamp near the footpath lit for 30 seconds. A busy street could be lit permanently by foot-power: a quiet one could be lit on demand. Surplus power could be stored in batteries until needed.

150 places round the world have tried Pavegen's 'smart tiles', which contain electromagnetic generators – among them Heathrow airport (where it is used to create decorative lighting patterns in Terminal 3) and the football pitch in Lagos, Nigeria, where tiles under the pitch help power the floodlights. TfL is to try them in a pedestrian area off Oxford Circus.

A trial in Washington DC hit technical problems, which have now reportedly been fixed; and a quick scan of the internet reveals some scepticism.

Rail

Drones Reduce Rail Cargo Theft

Polish State Railways are successfully using drones to monitor freight trains. In the first six months, a reduction of 59% by value (1.6m zlotys) and 44% in number of thefts of cargo has resulted.

Specially trained and authorised staff manage the drones.

The drones are small, almost silent and almost invisible: their cameras (which include infra-red ones for use at night) are sufficiently good to enable prosecution-quality images to be acquired.

Apparently the most common thefts are of coal and scrap metal. Thieves put obstacles on the line, and when the train stops to avoid a collision, they board the wagons to steal the cargo. In the first half of 2015, 350 thefts of coal (down 36% on a year ago) were reported. Scrap metal thefts were down 62% on the previous year.

Israel Railways 2040 Strategic Plan

Lightly edited from International Railway Journal

Israel Railways (IR) presented details of its Shekels 123.6bn (\$34.9bn) 2040 Strategic Plan at a conference in Tel Aviv on June 8, revealing ambitious proposals to double the size of the network over the next two decades with high-speed trains connecting key centres.

Under the plan, the network is projected to grow from 1232km to 2572km between 2020 and 2040, with the number of stations increasing from 68 to 120. IR's passenger train fleet will almost triple from 139 in 2020 to 511 in 2040.

The plan allocates Shekels 94.78bn for infrastructure, and Shekels 19.26bn for rolling stock, Shekels 9.6bn for depots and stabling facilities, with an overall benefit:cost ratio of 1.0.

Passenger numbers are forecast to grow from 59.5m in 2017 to 81.2m in 2020 and 306m in 2040, with rail's share of the public transport market rising from 3% to 8% between 2020 and 2040. Rail's share of journeys of more than 50km would grow from 10% to 40% and the percentage of passengers able to reach Tel Aviv in less than 90min would rise from 16% to 64%.

Peak passenger services will increase from 50 trains in 2020 to 128 in 2040, with 96 services running at up to 160km/h and 32 at a maximum of 250km/h.

As the number of stations increases, IR envisages separate categories of inter-city and regional services to maintain rapid links between major towns and cities. Double-track lines will be four-tracked and the Eastern Line between Kfar-Sava and Hadera East will be revived to bypass congested lines in the Tel-Aviv area.

On the core inter-city network lines will be widened from two to four tracks to enable 250km/h operation. Lines earmarked for four-tracking comprise Tel Aviv - Haifa, Tel Aviv - Ayalon, Lod - Beer Sheva, and Ashkelon - Pleshet Junction. A 20km double-track tunnel between Tel Aviv Hahagana and Rishpon (north of Hertzliya) will provide six tracks on this section.

The plan, which was drawn up by IR and the ministries of transport and finance, has been sent to the transport minister for feedback before submission to the cabinet for approval.

IR is proposing a number of cross-border links including a line to Lebanon; Jenin - West Bank; Hebron - West Bank; Eilat - Aqaba (Jordan); Ashkelon - Gaza; and a connection across the Sinai desert to Egypt, following the alignment of the former Ottoman railway.

Other major projects in the strategic plan include:

- Afula (Valley Line) - Hadera East
- Lod station bypass, and
- expansion of Ben Gurion Airport station.

New State-owned Company to take over Danish Rolling Stock Procurement

Source: International Railway Journal



Denmark's Ministry of Transport, Building and Housing announced on June 15 that it plans to establish a new state-owned rolling stock company to take over the procurement and ownership of new trains from Danish State Railways (DSB).

The announcement came as DSB published detailed proposals on plans for the acquisition of new trains, which will

Train at Orestadenhagen - Malmo service station, on Cop

replace the IC3 and IR4 trains as well as the ill-fated AnsaldoBreda IC4 DMUs, expand the fleet to boost capacity, and meet the increased requirement for electric trains as more lines are electrified.

The report, which was drawn up by external consultants, recommends the procurement of 204 trains providing a total of 43,000 seats. The total value of the order is estimated to be DKr 14bn - DKr 17bn (\$2.1-\$2.6bn).

Approval of tender documents is expected by the end of 2017 and the contract will be awarded in the second half of 2019.

The strategy calls for “steady phasing in of new equipment” with the delivery of three trains a month between 2024 and 2028, with the final trains arriving in 2029. These trains would be for domestic use, but the report highlights a requirement for rolling stock for international services. Dual voltage trains would be required for operation into Germany from 2028 and Sweden from 2034, when the current Øresund trains will be phased out. These trains would be acquired separately from the main contract.

The phasing out of the IC3 and IR4 fleets will reflect the delivery schedule for the new fleet. The final phase-in rate will be determined before the contract is signed in 2019.

In contrast with IC4, the report stresses the importance of adopting a proven platform for the procurement, with a uniform fleet considered the most cost-effective option. “We must avoid the fatal mistakes that were made with the acquisition of IC4,” says transport, building and housing minister Mr Ole Birk Olesen. “The proposals are a major step towards replacing DSB’s outdated fleet and introducing stable and modern electric trains.”

NS to Change Traction?

Edited from an article in Railway Gazette International

Netherlands Railways (NS) is considering changing its traction supply from 1.5kV DC to 3kV DC, with studies well in hand.

1.5kV DC was adopted in 1922: about 75% of the 3061km network is electrified and diesel-operated regional lines are gradually being electrified too. The electricity (1400 GWh/year) comes from wind farms.

A problem of 1.5kV is that the maximum current draw is restricted to 4 kA, so the power available for accelerating a heavy train is 6 MW. Drawing such high currents results in transmission losses of up to 10%: this all imposes constraints on train operations and is a fundamental issue when planning timetable changes.

Power supplies have been strengthened over the years, but this is felt to be no longer an adequate response – especially since NS plans to increase frequencies to 6 trains/hour on key intercity routes (something which will increase demand to 1680 GWh/year).

Railways in Belgium uses 3kV DC: those in Germany 15kV DC. Two Dutch lines are electrified at the (virtually) standard 25 kV AC – the HSL Zuid between Schiphol airport and the Belgian border, and the Betuwe Route carrying heavy freight between Rotterdam and the German border. Converting the entire network to 25 kV was studied, but was found to be very expensive and disruptive and was rejected in 2012.

A quirk of the heavily-used Dutch rail system is that higher speeds would not significantly reduce journey times: distances between cities are relatively short.

Better results can be obtained by removing bottlenecks and smoothing traffic flow to reduce congestion.

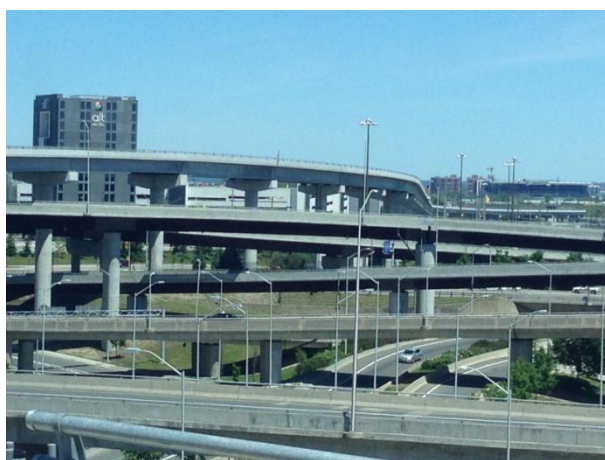
Use of 3 kV can facilitate greater use of regenerative braking – with 1.5 kV, much of the energy generated by dynamic braking is dissipated in heat and other energy losses over the system. 24%, instead of the current 8%, of energy can be recovered with 3 kV. Doubling the supply voltage halves transmission losses generally while allowing more power to be provided to trains. The cost of new substations and traction packages necessary for a more intense timetable would be lower with 3 kV. Faster acceleration is possible, especially over 60 km/h. This will reduce the impact of increasing the number of stopping trains: they can save between 7 and 20 seconds for each station stop. Energy losses can be reduced from 10% to 4%. While 2%-3% more power will be needed for the faster acceleration, it is estimated that overall electricity purchases will reduce by 19½%.

A study of measures to reduce CO₂ emissions in the Netherlands found that conversion to 3 kV was the most cost-effective – even though the proportion of energy consumed by rail is relatively low.

Conversion is likely to take 10 years, with a 7-8 year preparatory phase during which time trains and substations will be modified. The switchover itself is likely to be achieved in around a year, in 10 phases during each of which an area of the network will be converted.

More work, including a full risk assessment, is needed before a final decision.

Toronto – Windsor High Speed Rail



The maze of highways north of Toronto Airport

A report, “Preliminary business case for high speed rail on the Toronto to Windsor Corridor” was produced by Steer Davies Gleave for the Ontario Ministry of Transportation in November, and the government has recently decided to act on it.

A sketch of the complex Pearson Airport area is below.

The report set out two options – Scenario A, a 300 km/h service which included a new tunnel from

the Humber River crossing (near Weston) running under Toronto Pearson airport; and Scenario B, a 250 km/h service using existing right of way where possible. The latter gives ‘indirect access’ to the airport using Malton station (and the study recommends further work on the Pearson connection under Scenario B). That scenario would also involve creation of a grade separated crossing of the fast lines to allow UP Express to cross over from the slow lines, and a dedicated connector service between Malton station and the airport.

End to end journey times (Toronto – Windsor) are 115 minutes (Scenario A) and 124 minutes (B): the total project is Toronto – Windsor, but London is a natural break-point. Scenario A is projected to achieve 11.6m passengers/year, and Scenario B 10.6m. Scenario A has lower value for money because of the cost of the tunnel, but

the necessary freight rationalisation costs for Scenario B are not included. Mode shares on the corridor are rail 2%, car 93%, bus 5% and air, less than 1%.

Recommendations include using Scenario B, and identifying a direct connection solution to Pearson (which would increase benefits by C\$250m and generate another 1m passengers/year, mostly between Toronto and Pearson). A station at Pearson would contribute to the airport's multi-modal interchange aspirations. The number of Pearson passengers is assumed to be 3.233m (Scenario A) or 2.007m (B). Union – Pearson travel times were assumed to be 14 minutes (A) or 16 minutes (B) – compared with 25 minutes on UP Express with 2 stops.

The annual number of O&D trips in the corridor likely to use high speed rail is 51m, increasing to 78m by 2031 and 96m by 2041. Forecast revenue is C\$278m/year (scenario A) and C\$273m/year (scenario B). Operating costs are forecast at C\$220m (both options).

The crossing of the Niagara Escarpment will be tricky to achieve: it is likely to be near the existing right of way. Scenario A will need 130.6km of greenfield land (3.396m²), while B will need 67.7 (1.76m²). Presumably B needs less because it uses more existing right of way.

The noise impact is uncertain: there will be more trains, but they will be quieter.

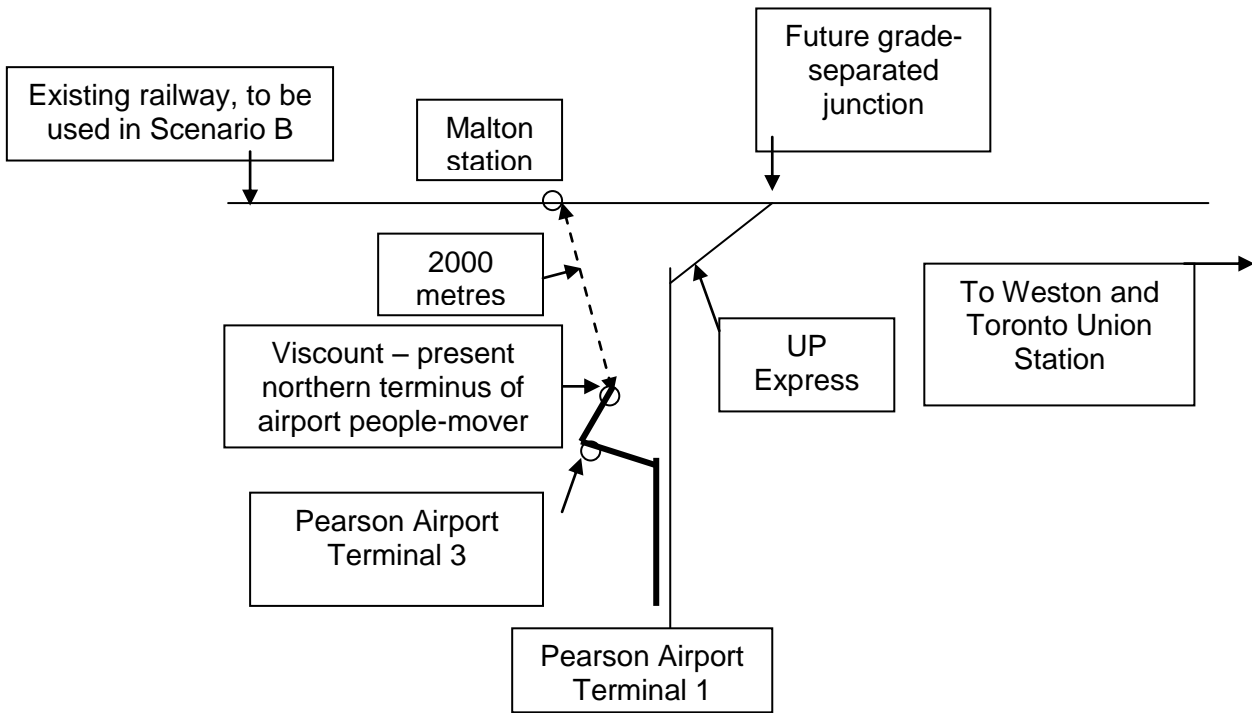
In the Economic case, Scenario B, the Toronto – London segment has a BCR of 1.02: for the full Toronto – Windsor route it is 0.70. These increase to 1.09 and 0.75 with wider economic benefits (WEBs). NPVs, including WEBs, are C\$1.56bn and - C\$7.25bn. Figures for scenario A are significantly worse. Toronto – London reaps 85% of the economic benefit but 61% of the costs. Bi-mode (diesel/electric) trains would save the cost of electrifying London – Windsor. Trains are assumed to tilt, although why this complication is needed on what will largely be new infrastructure is unclear. 90 grade separations will be needed along the route, replacing level crossings on what is largely a freight railway.

Scenario A increased travel to Pearson (but mainly from Toronto): it decreased longer-distance (and more valuable) ridership to Malton, which it would not serve.

Safety is monetised at C\$0.08/km for each km of road traffic removed. GHG was valued at C\$0.01/km.

Sensitivity tests based on costs and benefits varying by 10% were done: there is no mention of (for example) increasing the costs of oil by 50% or 100%, which might impact on traffic forecasts.

In the financial case, Scenario B has a BCR of 0.44 (Toronto – London) or 0.32 (Toronto – Windsor). So revenues cover 44% of total costs in the best scenario. Only after 2041 do revenues exceed operating costs.



Fly Quiet and Clean

Lightly edited from Heathrow's website



Malaysian A380 at Heathrow

The Fly Quiet and Clean programme is one of the steps Heathrow is taking to reduce aircraft noise. Heathrow has some of the world's toughest rules and regulations on noise, which has played a major role in driving developments in quieter aircraft technology. Limits and restrictions in force at Heathrow, and in particular those that apply to flights at night, promote the use of 'best in class' aircraft. Heathrow also provides financial incentives for airlines to use the quietest

aircraft through variable landing charges. Together these have contributed to more of the quietest planes being used at Heathrow – on average the aircraft used by airlines are 15% quieter than the total global fleets of those airlines.

Since the 1970s these improvements in technology means there has been a tenfold decrease in the number of people within Heathrow's noise footprint, despite the doubling of aircraft numbers over the same period. This fall in population has continued in recent years even while flight numbers have remained steady.

Managing the impact of aircraft noise for local communities is not just about improving technology. How and where aircraft are flown are other important factors for reducing the impact of noise. Airlines, airports and air traffic controllers employ a number of procedures to limit noise in this way and Heathrow has been at the forefront of promoting the use of these.

The Fly Quiet and Clean programme is intended to further encourage airlines to use quieter aircraft and to fly them in the quietest possible way. The programme includes the UK's first ever league table which ranks airlines according to their noise performance. The 50 busiest airlines at Heathrow will now be publicly ranked on their work to reduce emissions and noise in their operations. Every three months, Heathrow will publish its new Fly Quiet and Clean League Table showing a red/amber/green rating for seven noise and emissions criteria.

The new league table is an expanded version of the successful Heathrow Fly Quiet programme, which has tracked airlines' noise performance since 2013 and incentivised airlines to use their quieter aircraft types and operating procedures at the airport. It adds two emissions-based criteria which scores the type of engines used by aircraft (the 'CAEP' score) and the efficiencies of aircraft when it comes to NOx emissions/seat (the 'NOx/seat' score).

As part of the airport's efforts to reduce the number of aircraft operating at night, and to provide more predictable periods of noise respite for local residents, the new table also includes a new metric tracking unscheduled airline operations between 23:30 and 4:30 in the morning.

The Fly Quiet and Clean Table is part of Heathrow 2.0, the airport's new sustainability strategy, which aims to make Heathrow the world leader in delivering the cleanest aircraft and operations possible, targeting emissions in several ways:

- On arrivals: by linking landing fees to an aircraft's NOx emissions. In 2017 this fee was increased by nearly 100%.
- On the airfield: by encouraging airlines to use reduced-engine taxiing.
- At gates: through £20-million-pound investment in technology like pre-conditioned air so aircraft can turn their engines off. This year, Heathrow is aiming to increase the use of this technology by 20% compared to 2016.

By publishing the table each quarter, Heathrow aims to recognise good performance, provide airlines with regular feedback, and identify specific areas to be targeted for improvement. Heathrow will engage with airlines showing red results in the latest league table to improve their rating.

Information on the Fly Quiet and Clean programme, along with the current table and previous rankings can be found at www.heathrowflyquietandclean.com. This shows how the rankings are calculated – each of the seven measurements is weighted by importance, and to achieve a perfect score (1000 points) an airline would have to be number one in each of them.

Taking Emirates as an example, its score for Q1 2017 is 891. This is based on the following rankings: noise quota count/seat, 15th out of 50 airlines; chapter number (noise classification) 4th; NOx emissions/seat 23rd; CAEP standard (engine emissions) 3rd; continuous descent violations 26th; track keeping violations 17th; and early or late movements 38th. All except the last rate a green traffic light: the final one scores an amber.

Kuwait Airlines (49th on the list, scoring 484) has three red lights, one yellow and three green.

An interesting concept, and it will be interesting to see how it develops. Operators of A380s, for example, probably score well on noise quota/seat. However, a long and slow take-off reduces fuel consumption (and therefore NOx/seat) but increases noise. Does the scoring incentivise the best result?

Recent IATA Statistics

IATA produced its **Airlines Financial Monitor** for February-March in mid-April. Key points were as follows.

Despite an improved performance by European carriers, the latest financial results for Q4 2016 confirm a second quarter of modest easing in industry-wide profitability – albeit from historically high levels. Global airline share prices fell by 1.5% in March, unwinding recent gains, with a correction in the North American index more than offsetting modest gains in Europe and Asia Pacific.

Brent crude oil prices fell substantially in March, ending ~6.4% lower, at \$52.40/bbl. Oil prices are 30% higher compared with a year ago and are still expected to rise only gradually over the next 2-3 years.

Although still well down on their year-ago level, the average passenger yields are showing preliminary indications of having possibly bottomed, after falling steadily for around 4 years.

The momentum that passenger and freight demand carried into 2017 may be starting to wane, although the data are always more volatile at this time of the year. The industry-wide passenger load factor remains steady at historical highs, while the freight load factor has eased a little after a strong recovery in 2016.

The March-April report came out in mid-May. It noted that global airline share prices rose by 2.5% in April, partly reflecting expectations that the squeeze on margins will diminish. The monthly increase was driven by European airlines, with modest increases in Asia-Pacific and North America. The initial financial results from Q1 2017 highlight the extent that airline profit margins were squeezed in the opening months of the year by a combination of higher costs and weak yields.

Brent crude oil prices fell sharply in mid-April, and dropped below \$50/bbl in early-May for the first time since the end of November. Forward markets still expect oil prices to rise only gradually over the next 2-3 years.

Passenger yields remain well below their level a year ago, but there are ongoing signs that the long-standing downward trend in the seasonally adjusted series may be bottoming out.

Passenger and freight demand growth has made a strong start to 2017. The passenger load factor remains steady close to a record high level, while the freight load factor has recovered back to levels last seen in early-2015.

Premium airfares continue to hold up better than those of the economy cabin, supporting airline finances.

The results of the April 2017 **Business Confidence Survey** were issued at the end of April. They showed that, when surveyed in early-April for IATA's quarterly business confidence index, airline CFOs and heads of cargo reported a decline in profitability in Q1 2017 compared to the same period of 2016. This is consistent with wider signs that the industry profit cycle peaked during the first half of last year.

Industry heads expect profitability to rise over the coming 12 months. However, there was a wide range in the responses and, overall, the results were slightly less positive than in January's survey

On the demand side, the survey responses were consistent with the robust growth seen in both passenger and freight volumes at the start of 2017. Respondents remained very positive about demand prospects for the year ahead: more than three-quarters expected passenger volumes to rise, while the forward-looking weighted-average score for freight has now risen in each of the past four quarterly surveys.

41% of respondents reported an annual increase in operating costs in Q1 2017 – the highest proportion in four years – reflecting a combination of higher fuel prices and rising labour cost pressures. These trends are expected to continue over the year ahead: the forward-looking weighted-average score rose to its highest level since April 2012.

The downward trend in passenger yields has showed tentative signs of turning around in recent months, and 35% of our respondents reported higher yields in Q1 2017 compared to a year ago. Meanwhile, heads of cargo are confident about prospects for freight yields over the coming 12 months: the forward-looking weighted-average score for freight yields jumped above the 50-mark for the first time since July 2014.

Airline employment activity increased for the ninth consecutive quarter in Q1 2017. More than one-third of respondents reported that they expect to increase employment levels over the next 12 months.

The **Air Passenger Market Analysis** for February, issued at the beginning of April, noted that annual passenger growth fell to 4.8% in February, but was distorted by the fact that 2016 was a leap year. The passenger market has made a strong start to 2017, reflecting a combination of ongoing stimulus from lower airfares, stronger economic conditions, and a favourable annual comparison after disruption a year ago. Middle East airlines posted the fastest international growth, as India topped the domestic chart for the 23rd month in a row. Airlines have moderated capacity growth in recent months, with the load factor posting an all-time February high.

The March report, issued at the start of May, said that global revenue passenger kilometres (RPKs) grew by 6.8% year-on-year in March. RPKs grew by more than 8% in annual terms in Q1 2017 adjusting for the leap year, supported by lower airfares and an upturn in economic activity. But there were tentative signs of such drivers becoming more mixed. China overtook India as the fastest growing domestic market, as Latin American carriers posted the fastest international growth. The seasonally adjusted load factor remained steady in March, close to its record high.

The report for April, published on 1st June, said that global RPKs grew by 10.7% year-on-year in April – the fastest pace in 6 years. Industry-wide passenger demand continued to be supported by a pick-up in economic activity and lower airfares, although the ban on personal electronic devices seems to have weighed on Middle East-North America traffic. Every region saw double-digit annual international RPK growth in April; Russia posted the fastest domestic growth. The seasonally adjusted load factor reached a fresh all-time high.

It depends on how you measure it!

Lightly edited from Travelmole.com

Heathrow loses its position as Europe's largest airport.

Amsterdam's Schiphol has overtaken Heathrow as Europe's largest airport for direct flights. According to the Airports Council International (ACI) Europe, Schiphol has risen from sixth place in 10 years. It put the reason for its growth partly down to the rise of low-cost carriers, which now make up 21% of its direct flights.

Heathrow's growth, on the other hand, has been constrained by a lack of capacity. Frankfurt, Paris Charles de Gaulle and Istanbul Ataturk airport make up the rest of the top five airports for direct flights.

ACI Europe's airport industry connectivity report found that for the second year in a row, direct flights are growing at a faster rate than indirect and connecting flights. It said this reflected the expansion of low cost carriers on both short and medium haul markets and 'the relative retrenchment of network carriers'. ACI said that over the past 10 years, 99% of the growth in passenger traffic of the top 20 European airports has been delivered by low cost carriers.

According to ACI, "Europe's airports will see 87 long haul routes being operated by low cost carriers this summer, up from 14 just four years ago. "The next step - which Ryanair has just started experimenting with, is to offer feed to network carriers or even develop their own connecting product."

Frankfurt still boasts the highest number of connecting flights, followed by Amsterdam, Dallas-Fort Worth, Paris Charles de Gaulle and Atlanta. However, Abu Dhabi has been the fastest-growing hub since 2007, followed by Delhi and Guangzhou

Norwegian Air Shuttle Statistics

The low-cost carrier Norwegian, notable by its red nose and portraits of famous people on the tail, has successfully moved into long haul.

Anna.aero recently set out the number of available seat kilometres a week and the number of departures a week (both one way only) for its top destinations.

Distance clearly counts, with the three flights to Los Angeles and four to New York outweighing the 18 to Barcelona and the 31 to Gatwick. Even the weekly flight to Bangkok has more ASKs than the 24/week to Stockholm.

The airline has recently announced plans for flights to Buenos Aires.

Destination	Departures/week	ASKs/week (m)
Los Angeles	3	8.36
New York JFK	4	7.20
Malaga	14	6.43
Barcelona	18	5.92
Gatwick	31	5.67
Palma	15	5.38
Oakland	2	5.11
Nice	18	4.63
Fort Lauderdale	2	4.54
Rome	14	4.00
Madrid	10	3.83
Oslo	32	3.07
Alicante	7	2.82
Bangkok	1	2.51
Stockholm	24	2.44

The Cost of Going Green

The article from which the following was taken appeared in 'Airlines' for June/July 2017. 'Airlines' is produced by IATA, the trade body for legacy airlines, and no doubt reflects their perspective.

The airlines have pledged to pursue carbon-neutral growth from 2020, mainly using carbon offsetting – a scheme known as CORSIA. For every tonne of carbon emitted over the 2020 baseline, airlines will invest in UN-approved carbon offsets. As well as CORSIA, the industry wants infrastructure improvements, operational efficiencies and technological developments mainly by the use of biofuels.

Biofuels still result in the same amount of CO₂ as kerosene, but some of the fuel is produced from plant material which recently sequestered carbon in the first place. Other sources of biofuels are municipal waste and residual material produced in the course of forestry (forest residuals).

At the moment, it is thought that 4% of road transport fuel globally is produced from biofuels: the aviation proportion is far less because of strict safety and quality requirements. There is a Roundtable for Sustainable Biomaterial (RSB) which certifies sustainability and quality based on lifecycle analysis. To date, over 5000 flights have taken place using biofuels (although these are generally mixed with conventional fuel, and not used in isolation).

Alaska Airlines started using a mix including 20% of biofuels derived from cooking oils in 2011: more recently, non-edible field corn has been used, and last year forest residuals started to be used. Initially, their biofuels were six times more expensive than kerosene: even now, they are 2-3 times higher. This is because they are batch-produced, rather than using continuous production: if larger amounts were to be produced, unit costs would reduce.

Apparently today's biofuels have a higher energy density, so aircraft can fly further on the same volume of fuel. NASA has published a report showing that they produce less soot than kerosene: this means less contrails and less cloud cover

Too Hot to Fly

Lightly edited from Travel & Tour World

Dozens of flights were cancelled in mid-June due to excessive temperatures as the US National Weather Service warned of "excessive heat" across the south-western states of the country. According to the local media reports, afternoon temperatures in the Arizona state capital, Phoenix, are expected to reach 49°C. Because of this predicted heat, the city's Sky Harbor airport, which is one of the 10 busiest in the US, has cancelled dozens of flights. High temperatures make the air thinner, reducing lift and impairing an aircraft's performance.

Many American Airlines' regional services use Canadian-build Bombardier CRJ aircraft, which are not certified to operate above 48°C. This is why the airline has preemptively cancelled more than fifty flights that were due to be operated by Skywest and Compass airlines under the American Eagle brand. Most of the affected flights are to and from Phoenix. Some services to and from Flagstaff/Grand Canyon are also grounded as the airport is at an altitude of 2134 metres. Because of the rarefied air, hot and high airports become more challenging.

Airbus and Boeing jets' performance are also impaired by heat.

Road

The Rising Cost of Bike Crashes

Edited from CityLab



Cycle storage at Millbrae Station, San Francisco

As more Americans are riding bikes, it's no surprise that more cyclists are getting injured. In the US, there's been a 120% increase in hospital visits due to bike crashes since the late 1990s. And more than 800 riders died in car-on-bike incidents in 2015, averaging out to about two each day.

What is less evident, though, is that on a case-by-case basis,

the **costs** of these incidents are increasing. While an adult rider who suffered a serious (but nonfatal) crash in 1997 might expect it to cost roughly \$52,495—including medical bills, missed work, and loss of quality of life—the inflation-adjusted price grew to \$62,971 in 2005 and \$77,308 in 2013. That's according to a new paper in *Injury Prevention*, revealing that the total costs of bike injuries in the U.S. have risen an average of \$789 million yearly since the late '90s, reaching \$24 billion in 2013.

"Our overall message is to remember that the health benefits of cycling certainly outweigh the potential drawbacks. Many, many people cycle every day injury-free," says Thomas Gaither, a study co-author and medical student at the University of California, San Francisco. "However, our hope is that by quantifying these costs it will help to spur discussion and policy surrounding infrastructure for safe cycling."

What's behind this? Age has something to do with it: the pool of cyclists in the U.S. is turning grayer by the year, with the number of miles travelled by bike annually by people 45 and older increasing from 1.9 million in 2001 to 3.6 million in 2009, according to the study.

In some medical circles, being over 39 is considered a risk factor for incurring a life-altering cycling injury. Everything that can happen to your head in a bike wreck, such as intraventricular bleeding and subdural hematomas, occurs more frequently in older populations. If you're over 55, meanwhile, you have double the chances of dying when hit by a car compared to a younger person.

"Older patients not only require longer recovery periods," says Gaither, "but they also are more susceptible to more-severe injuries and have more medical comorbidities, which drive hospital costs."

Where you ride also influences the costs, with urban environments seeming more prone to costly crashes. In the past, says Gaither, a lot of bike accidents arose from non-street incidents. But as people continue to pedal in high-traffic, often chaotic, avenues, more are experiencing high-impact vehicle collisions requiring longer hospital stays. According to the study, costs stemming from crashes on streets and highways have risen about 0.8% every year since the late '90s.

"We found that along with increasing costs, crashes on urban streets have increased," he says. "Cycling is becoming more popular in urban areas and may be a reason for the increased cost. Certainly, crashes in urban areas may be more severe as they are more likely to encounter motor vehicles."

There is a silver lining, however. Injury costs/mile ridden in the U.S. have dropped from \$2.85 in 2001 to \$2.35 in 2009. That basically means that miles ridden are increasing faster than costs due to injuries, says Gaither.

"This is a bit of good news," he says. "It definitely coincides with bicycle helmet laws in many states and with the general trend of helmet use in the U.S. We know that head injuries are extremely costly and this may be a reason for the slight decline."

Miami-Dade County Public Transport Statistics

Each month, Miami-Dade County in Florida publishes a very comprehensive report on ridership – the Ridership Technical Report. These can be found on <http://www.miamidade.gov/transit/ridership-technical-reports.asp#0>, and are an excellent resource.

It starts with an all-modes overview, summarising total bus, rail, the free downtown automated people mover Metromover, and Special Transportation Services ridership for weekdays, Saturdays and Sundays (splitting out public holidays in a footnote). The totals have a percentage change on the same month the previous year. Next comes an average weekday, Saturday and Sunday figure for each mode, with a percentage change on the previous year. This is followed by a 5-year summary of total ridership for the month.

There is then a total ridership figure for each mode, month by month, with a comparison of the previous 5 years.

Next come separate sections for each mode.

Bus ridership by route (average weekday, Saturday, Sunday and a monthly total with percentage variations on the previous year) is given, followed by bus ridership by service type. There are several park and ride bus stops: usage of the parking lots at each is given (with percentage occupancy).

Rail boardings by station are then given – again, average weekday, Saturday, Sunday and a monthly total with percentage variations on the previous year. There is a histogram showing month-by-month ridership over five years (peak months are March and October, with nearly 2m riders each: June, July and August are low months with 1.6m – 1.7m riders). Again, usage of parking lots is given.

From rail ridership figures, it can be seen that usage of the airport station has grown. 12-month moving averages for the month of July are 41,254 (2013), 45515 (2014), 47682 (2015) and 52493 (2016). The 12-month moving average to February 2017, the latest month available, was 52133.

The same data are given for Metromover: peaks and troughs are still there, but less pronounced than for Metrorail.

Finally, monthly ridership totals are given for the STS service.

The County is planning service cuts: the excellent data it produces are being used by riders to suggest that some cuts (for example to the airport service, which has seen smaller falls in weekend ridership than many others) are unjustified and may be counter-productive.

A Profile of Ride Hailing in San Francisco

San Francisco County Transportation Authority, from The Source

Here are some stats about Uber, Lyft and other ride hailing firms that may give your eyebrows a lift:

- On a typical weekday, TNCs make more than 170,000 vehicle trips within San Francisco, approximately 12 times the number of taxi trips, representing 15% of all intra-San Francisco vehicle trips.
- On an average weekday, more than 5,700 TNC vehicles operate on San Francisco streets during the peak period. On Fridays, over 6,500 TNC vehicles are on the street at the peak.
- TNCs drive approximately 919,000 vehicle km within San Francisco on a typical weekday. This accounts for 20% of all local daily vehicle miles travelled (VMT) and includes both in-service and out-of-service mileage. Taken over total weekday

VMT, which includes regional trips, local TNC trips account for an estimated 6.5% of total weekday vehicle miles travelled.

Why is this interesting? Well, San Francisco has a pretty good transit network and is pretty pedestrian friendly in many places. And still Uber, Lyft and the like have managed to build a pretty big business there.

Of course, more than 30% of San Francisco households have no cars — in Los Angeles County that rate is usually between 5% and 10%, depending on the city. Still, the San Francisco study suggests that not having a car is not the same as not using cars.

Vehicle Licensing Statistics Q1, 2017

In mid-June, DfT issued a statistical release on vehicle licensing for the January – March quarter. It can be found at

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/619078/vehicle-licensing-january-to-march-2017.pdf

In the quarter, 959,000 vehicles were registered for the first time in Great Britain. This is the first time new registrations in a first quarter have exceeded 950,000; and the figure is 4.6% up on the same quarter last year (also a record). A factor may be the changes in vehicle excise duty introduced in April 2017: another may be the timing of Easter (March in 2016, April in 2017).

84% of the new registrations were cars, 10% vans and 6% motorcycles, HGVs, buses and other vehicles. 50% of newly registered cars in the quarter were petrol powered and 46.4 diesel with the rest powered by alternative fuels. 'Peak diesel' – the highest quarter for diesel powered cars - was in Q2, 2012 (50.9% of new registrations). 1.3% of new registrations were ultra-low emission vehicles.

At the end of March 2017, there were 37.5m vehicles licensed for use on roads in Great Britain, of which 31.1m were cars. In the year to March, the stock of vehicles was 2.2% up on the previous year. This is the sixth consecutive quarter that year-on-year increases have exceeded 2%. The number of licensed cars and vans was at its highest ever level in March 2017.

Over the last 20 years, vehicle stock has increased by 42.4% - 75.6% for vans, 69.7% for motorcycles, 39.4% for cars, 14.3% for HGVs and 2.5% for buses and coaches.