TSUG

Transport Statistics Users Group

Monthly Review: August 2019

This month's review shows that In EU, for most transport modes, only 15% to 25% of external and infrastructure costs are covered by revenues from current transport taxes and charges. For most modes, infrastructure costs are not covered by infrastructure charges – so the user is not paying. CFL earned a net profit of €10m for 2018, the same result as 2017 and the railway's fifth consecutive profitable annual result. DB recently presented its "Strong Rail" strategy and in the future, the company will focus on consistently upgrading its core business. DLR's passenger journeys and PKM peaked in 2016/7, at 656.8m and 122.3m respectively. The following year they dropped a bit (to 643.6m and 119.6m) before climbing back to 653.6m and 121.8m. MTA announced an 81.5% on-time performance on the MTA NYCT subway system in June, marking the first time the figure has been above 80% since August 2013. In UK, there were 30.1 complaints/100,000 journeys for franchised rail operators in 2018-19 as a whole, an increase of 2.8% on 2017-18. Spring NRPS showed the level of satisfaction of a statistically significant number of passengers with a large number of aspects of their journey on the different train operators in Great Britain. At Gatwick Airport, passenger numbers were 46.442m, up from 2018's 45.693m. ATM were up from 280,792 to 281,741. Passengers/ATM were up from 162.7 to 164.8: seats/ATM were up from 187.4 to 191.0. WestJet's Q1, 2019 figures showed revenue was high, at C$4799m. It was C$4029m in the year to Q4, 2015. IATA's industry-wide RPKs continued to show solid growth in May, increasing by 4.5% in year-on-year terms. The total number of movements in the European aviation network hit a new high on Friday, 28 June 2019 with 37,228 flights, which broke the previous traffic record of 37,101 flights on Friday 7 September 2018. Southwest Airlines is the leader in actually getting travellers from point A to point B in the shortest amount of time. From 2006, passenger numbers in Vienna Airport have gone up almost every year (they dropped in 2009 and 2013). In 2018 they handled a record 27 million. PANYNJ completed the ExpressRail Port Jersey facility, the final piece of the port's intermodal rail network spanning facilities in Elizabeth and Newark, The Port of Los Angeles moved 9,688,252 TEUs in fiscal-year 2019, a 5.7% increase from the previous year. About 28% of seaborne trade is in oil, with a further 12% in coal and LNG. We have Message from the Chairman, TSUG, Letter from the Editor, and also Kit Mitchell's Statistics Digest.

Dr Shanta Bir Singh Tuladhar and Andrew Sharp

Contents

Dates of the next TSUG seminars

Date	Venue	Topic
Wed-14-Aug	TfL	The Impact of Carbon Change
Wed-18-Sep	TfL	Trip Generation
Wed-16-Oct	TfL	Domestic Freight – Rail & Road
Wed-20-Nov	TfL	High Speed Rail
Wed-11-Dec	TfL	Fuel Use & Climate Change

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

Statistics Digest

STATISTICS DIGEST August 2019

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	
11 July	Road freight statistics: 2018
https://www.gov.uk/government/statistics/road-freight-statistics-2018	
24 July	Rail passenger numbers and crowding on weekdays in major cities in England and Wales: 2018
https://www.gov.uk/government/collections/rail-statistics	
25 July	Reported road casualties Great Britain, main results: 2018
https://www.gov.uk/government/collections/road-accidents-and-safety-statistics	
31 July	National Travel Survey 2018
https://www.gov.uk/government/collections/national-travel-survey-statistics	
31 July	Walking and cycling statistics, England: 2018
https://www.gov.uk/government/collections/walking-and-cycling-statistics	

Forthcoming releases from Department for Transport	
8 Aug	Renewable Transport Fuel Obligation: Year 11 (2018) report 4 (15 April 2018 to 31 December 2018 supply)
https://www.gov.uk/government/collections/biofuels-statistics	
8 Aug	Renewable Transport Fuel Obligation: Year 12 (2019) report 1 (1 January 2019 to 31 December 2019 supply)
https://www.gov.uk/government/collections/biofuels-statistics	
15 Aug	Road goods vehicles travelling to Europe: July 2018 to June 2019
https://www.gov.uk/government/collections/road-freight-domestic-and-international-statistics	
21 Aug	Domestic waterborne freight statistics: 2018
https://www.gov.uk/government/collections/maritime-and-shipping-statistics	
21 Aug	Port freight annual statistics: 2018

https://www.gov.uk/government/collections/maritime-and-shipping-statistics	
22 Aug	Air passenger experience of security screening: 2018
https://www.gov.uk/government/collections/aviation-statistics	
28 Aug	Reported Road Casualties in Great Britain, final estimates involving illegal alcohol levels: 2017
https://www.gov.uk/government/collections/road-accidents-and-safety-statistics	
29 Aug	Journey time statistics: 2017
https://www.gov.uk/government/collections/journey-time-statistics	
Sept	Provisional road traffic estimates, Great Britain: July 2018 to June 2019
https://www.gov.uk/government/collections/road-traffic-statistics	
Sept	Travel time measures for the Strategic Road Network and local 'A' roads: July 2018 to June 2019 Road congestion and reliability
https://www.gov.uk/government/collections/road-congestion-and-reliability-statistics	
Sept	Reported road casualties Great Britain, annual report: 2018
https://www.gov.uk/government/collections/road-accidents-and-safety-statistics	
October	Taxi and private hire vehicle statistics, England: 2019
https://www.gov.uk/government/collections/taxi-statistics	

Recent releases from Office of National Statistics	
26 June	Population estimates for the UK, England and Wales, Scotland and Northern Ireland: mid-2018
https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforukenglandandwalesscotlandandnorthernireland	
9 July	Understanding towns in England and Wales: an introduction
https://www.ons.gov.uk/releases/townsanalysis	

Other releases Other releases	
5 July	Shifting the focus: energy demand in a net-zero carbon UK - Centre for Research into Energy Demand Solutions
https://www.creds.ac.uk/publications/shifting-the-focus-energy-demand-in-a-net-zero-carbon-uk/	

Seminar Write-up

Aviation Emissions Seminar Q&A

There were three speakers and four presentations, but really only time for significant Q&A sessions after the first two. I noticed I only took notes during the formal Q&A sessions, and therefore missed some of the debate during the sessions. You needed to be there!

The symbol ?? meant I was unable to capture the questioner's name.

Chris Waite BEIS GHG Inventory Team

Robin Whittaker – what happens with international container ships bunkering en route? If they refuel in Rotterdam before coming here, it's not part of UK emissions.

David Metz – do these include aviation non CO_2 GHGs? No, in particular there are large uncertainties around contrails. They last a few hours, CO_2 centuries.

Hanton, Campaign for Better Transport – what does the 10% (DEFRA domestic and international aviation) refer to? The 31% of emissions which is transport.

Simon Lister – does the separation of aviation into domestic and international interfere with good policy making? Unsure.

Charles Walker, Ricardo

Peter Gordon – potential for increase in load factors? We've probably gone as far as we can go.

David Metz – of the transport statistics we've heard about, these are about the most estimated and modelled. What quality control is there? DEFRA put a lot of emphasis on this.

Simon Lister – there seems to be a lot of variability in the accuracy of different factors: there is much detail on some (definition of international and domestic flights) but little on others (not knowing the engine type of an aircraft). Accepted.

?? – use of Eurocontrol data? Considered this.

Geoff Maynard, Greener by Design

Simon Lister. It's very complex because there were so many options. Who is in charge? Manufacturers are in the lead and will include enhancements if they are saleable. This needs appropriate incentives.

?? - The energy density of batteries is less than 10% of that of kerosene. Kerosene has a long carbon chain: would a different hydrocarbon lead to less CO_2? The impact is less extreme than electricity, but less carbon means less energy! It is possible that special fuels could be developed although this would be long-term.

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

Note to the Readers

Don't forget that you can download slides of previous seminars from our website including the most recent. Please log in, click on the seminar tab and then on 'view a list of past seminars' on the top line. We have presentations going back many years, but apologies if a few are missing, occasionally speakers do not wish us to include their presentations. Also it can take a few days for speakers to release their presentations.

Presentations from previous seminars can be downloaded from our website:
https://www.tsug.org.uk/past_seminars.php

Please inform us if you have trouble logging in.

Members' Forum

Message from the Chairman, TSUG

We have added the presentations of most of the recent meetings to the website. They are available by visiting our website at http://www.tsug.org.uk/index.php. You will need to log in using your e-mail address. Please contact us if you have any problems. Select the Seminar tab (the third from the left) and click on 'You can view a list of past seminars'. A few are missing either because the speaker did not wish us to use them or because they are not available.

Peter Gordon

Letter from the Editor

TSUG Review

The editors would like to encourage more people to write articles for the Review. At the moment, this work falls on a small number of people, and of course reflects their interests. Both of these reduce the comprehensiveness of our coverage.

YOU could easily write once a year about some statistics you have seen: please do so, and send them to the Editors.

Editor, TSUG Newsletter

General News

Infrastructure Charging

In May, the European Commission published "Sustainable transport infrastructure charging and internalisation of transport externalities: main findings", a report on research by CE Delft into the internalisation of external and infrastructure costs of transport in the EU28. It is backed up by other useful-looking publications, including an updated Handbook on External Costs.

For most transport modes, only 15% to 25% of these costs are covered by revenues from current transport taxes and charges. For most modes, infrastructure costs are not covered by infrastructure charges – so the user is not paying.

Infrastructure costs are defined as direct expenses plus financing costs: annual infrastructure costs are the sum of annual depreciation and financing costs. They include investments, renewals, maintenance and operating costs. For road, rail and inland waterways (IWW), total infrastructure costs in 2016 were €267bn (€184bn road, €81bn rail and €3bn for IWW). For 33 major European airports, infrastructure costs were €14bn: for 34 major ports it was €1.4bn.

There is a table showing total, average and marginal infrastructure costs for each category of vehicle. Total costs were high for passenger cars (€98bn), electric passenger trains (€51bn) and HGVs (€42bn): average costs were high for diesel passenger trains (€0.27/passenger-kilometre – PKM), electric passenger trains (€0.134/PKM) and high speed trains (€0.106/PKM). Marginal costs were high for

diesel passenger trains (€0.035/PKM), buses (€0.019/PKM) and coaches (€0.018/PKM) – the two latter because of the relatively heavy weight of the vehicles.

Total external costs of transport are estimated at €987bn, although congestion costs were only included for road transport since they were not available for other modes. This is important, since it represents 27% of the total – second only after accident costs (29%).

Road transport, in particular passenger cars, is a major contributor to external costs – 83% of the total. Even excluding congestion, the figure is still 77%. External costs for rail are estimated at €18bn, for IWW €3bn, for aviation €48bn and for maritime traffic €98bn.

Motorcyclists cause the highest average external costs because of high noise and accident costs. Average external costs of buses and coaches are about a third of those of cars (which are €0.078, or €0.12 including congestion): the average for passenger rail transport is €0.028. Costs for buses and coaches are lower than cars because of the higher occupancy. Average cost for air is €0.034/PKM (an average, based on all flights to and from European airports).

Total revenue from taxes and charges for road, rail and IWW amounted to €370bn (€350bn from road, €20bn rail and €0.4bn from IWW). 81% of the revenue comes from passenger cars. Revenues at the 33 major airports amounts to €14bn.

Average revenues are €0.073/vehicle-km from light commercial vehicles, €0.068/PKM from diesel trains and €0.054/PKM from passenger cars.

Overall cost coverage is about 51% for passenger cars, 43% for light commercial vehicles, 34% from aircraft and 26% from high speed trains, heavy goods vehicles and diesel freight trains.

The report concludes that there is room for improvement. Specific suggestions include wider use of distance-based road charges, differentiated by vehicle characteristics; noise differentials in rail access charges; air pollution related charges for IWW traffic; and environmentally differentiated charges on aircraft.

The accuracy and consistency of data sets at EU level should be improved: more detailed and harmonised datasets on transport infrastructure should be constructed. The size and structure of transport subsidies in Europe should be assessed more accurately and more comprehensively, and total and average costs for different modes needed further research so that specific markets (short-haul trips) or specific corridors (Paris - Amsterdam) could be analysed with more accuracy.

An interesting and detailed report!

Rail

CFL in 2018
Source: International Railway Journal

Luxembourg Railways (CFL) has reported a net profit of €10m for 2018, the same result as 2017 and the railway's fifth consecutive profitable annual result. Net sales rose from €882.8m in 2017 to €892.5m in 2018, increasing by 52% since the 2009 financial year. CFL transported 23.3 million passengers in 2018, up from 22.9 million in 2017. Punctuality for CFL's passenger trains was 89% in 2018.

The overall result for CFL's freight operations was positive, despite continuing problems for its intermodal subsidiary. The CFL Cargo group posted a consolidated net profit of €2.1m, its fifth consecutive profit, despite the non-recurring major cost of transitioning its locomotive fleet to European Train Control System (ETCS).

The combined freight sector posted a loss of €4.6m, an improvement on the loss of €13.9m reported in 2017. This was due to significant costs related to the start-up and commissioning of new infrastructure and activities.

CFL says it has developed a customer-centric corporate strategy based on five pillars – safety, quality, innovation, know-how and performance – which will feed into the company's 2024 plan.

This includes:
- expansion of the network
- increasing the robustness of the system, with the objective of raising punctuality to at least 92%
- a 46% increase in seating capacity through the acquisition of new rolling stock
- improved mobile phone reception at stations, and
- the continued diversification of integrated logistics solutions.

CFL, which is also the infrastructure manager for Luxembourg's network, continued a number of large projects throughout 2018 including the construction of the new Luxembourg – Bettembourg line, which is due to open 2024. CFL also completed the re-electrification of the Luxembourg – Kleinbettingen line in September 2018.

CFL invested €227.5m in infrastructure during the year.

Deutsche Bahn and Strong Rail

The Management Board of Deutsche Bahn (DB) recently presented its "Strong Rail" strategy to the Supervisory Board in a day-long extraordinary meeting. In the future, the company will focus on consistently upgrading its core business. "Germany will only meet its climate targets if we succeed in shifting traffic to rail on a massive scale over the next decade," said DB CEO Dr. Richard Lutz. "Germany needs Strong Rail: for the climate, for people,

DB ICE Train at Brussels

for the economy and not least for Europe. DB acknowledges the responsibility we bear in society and we are focusing all of our efforts on building a strong rail system."

Late last year, the DB Management Board introduced its "Agenda for better rail service" program, which was designed to increase capacities, raise quality and punctuality and improve customer satisfaction. The new overarching strategy, Strong Rail, will now provide a larger framework that makes it clear what the DB Group stands for and what direction it will take in the future. The new strategy tackles key transport and climate policy targets of the German government..

These ambitious goals can only be achieved if Deutsche Bahn, the entire rail industry and policymakers tackle it together. In the coming months, important decisions will have to be made to implement these projects, including the new Performance and Financing Agreement (LuFV III) that will come into force in 2020. Here, progressively digitalizing Germany's rail network will play a key role, as will building new lines and upgrading existing ones.

Supported by digital technology, the Group will aim for growth in both passenger and freight transport in the coming years. DB will invest tens of billions of euros in new trains and increase operating performance on the network by 30%. In addition, more than 100,000 new employees will be hired in the next few years alone. Deutsche Bahn has also advanced toward its goal of using 100% renewable energy and will reach it in 2038, ahead of its original goal of 2050. The 173-page "DB's overarching strategy: Strong Rail" will replace the DB 2020 strategy that had been in place since the beginning of the decade.

The ten core messages of the new strategy at a glance:

1. Germany's climate targets can only be met with Strong Rail.
No other mode of transport is as eco-friendly or as strong in electric mobility. In order to meet Germany's climate targets, traffic needs to be shifted to rail on a massive scale. That's why Deutsche Bahn is making an additional significant contribution to reducing CO_2: although DB had originally planned to achieve 100% of traction power from green sources by 2050, it will now reach this goal by 2038.

2. Strong Rail focuses on DB's core business.
DB will assess its shareholdings based on their contribution to Strong Rail. DB Schenker is seen as providing key support to DB Cargo on its path to profitable growth. DB Arriva has little strategic relevance to building a strong rail network and should be sold.

3. Long distance transport will double its patronage.
DB's long distance transport will double its number of passengers to over 260 million/year. This will take an enormous amount of effort, but the addition of more direct connections and more frequent trains will help to meet this goal. When it is implemented, over 30 major cities will have twice-hourly connections between cities in Germany.

4. DB will add one billion new regional and local passengers.
DB plans to add over one billion regional and local rail passengers by strengthening its local rail services and integrating new forms of mobility.

5. DB Cargo will raise its rail traffic volumes in Germany by 70%.
The goal for DB Cargo is to increase traffic volumes in German rail freight transport by 70%, including by purchasing more than 300 new locomotives. DB is determined that Cargo will make a contribution to climate protection, specifically by increasing its market share in rail freight transport from the current 18% to 25% in a growing market. DB is also working with policymakers to find an economically viable, sustainable solution for single freight wagon transport, for example by investing in modernization and making it easier for customers to access the rail network.

6. DB will work with the German government to expand rail network capacity by 30%.
To be able to handle the growth in passenger and freight transport, DB will add 350 million train-path kilometres (t-p km), a 30% increase in capacity, to the German rail

network. This will be achieved by upgrading the system, utilising technological innovation and digitalisation, and through more efficient use of existing capacity. Capacity-friendly construction will play a key role here.

7. DB will enter a new era with Digital Rail for Germany.
The kick-off packet of DB's Digital Rail for Germany Group programme will help the company enter the digital era in rail operations. This represents a technological quantum leap and will improve capacity, quality, reliability and efficiency.

8. DB's stations will become hubs for state-of-the-art mobility.
Stations will be hubs of multimodal mobility and the centre of life in the city. The goal is to double station capacity to accommodate up to 40 million people a day and to create seamless transitions between rail travel and travel by bike or bus or using new mobility services (like carsharing and e-scooters).

9. DB will hire 100,000 new employees in the coming years.
DB is hiring at a time when most major companies are reducing their headcounts, and doing so on a massive scale. Over the next few years, some 100,000 employees will need to be recruited, trained and integrated for DB to reach its ambitious goals.

10. DB will have more trains and offer more connections than ever before.
DB is aiming to raise seating capacity in passenger transport by up to 100% by bringing the total number of trains in its long distance fleet up to 600, with a focus on investing in new high-speed trains. In addition, seven million more people (some 80% of the German population), will have access to the long distance network. This major jump in access will be achieved by linking more small and medium-sized cities with connections at least once every two hours. DB will also work to modernize nearly 1,000 regional and local trains, enabling them to transport up to 12% more passengers.

DB publishes an annual Facts and Figures booklet which contains many of the base figures with which these targets can be compared. This can be found at https://ir.deutschebahn.com/fileadmin/Englisch/2019e/Berichte/DuF18_e_web.pdf. In 2018, key data and Strong Rail targets were as follows.

Percentage of traction power from green sources – 57.2%. Target – 100% by 2038.
Long distance passengers – 147.9m. Target – 'doubled to over 260m a year'.
Local and regional passengers – 1,940m. Target – over a billion more.
Cargo volume sold – 88.237m train-km. Target – a 70% increase.
Train-path kilometres – 781.3m. Target – a 30% (300m) increase.
Trains in the long distance fleet – 274 ICE trains. Target – 600.

I cannot find base figures for other targets, but this is enough to be going on with! There are some interesting disconnects, which may be my misreading of the data: readers' views welcomed.

Light Rail Statistics UK

*Manchester Metrolink Train
at St Werbergh's Road Station*

DfT has recently published statistics for light rail systems in the UK. Comments on selected ones are below.

It could be argued that the **Docklands Light Railway** is hardly light rail: however, it's included in the statistics.

Both passenger journeys and passenger kilometres (PKM) peaked in 2016/7, at 656.8m and 122.3m respectively. The following year they dropped a bit (to

 643.6m and 119.6m) before climbing back to 653.6m and 121.8m.

Patronage on the **Edinburgh** system has been high but static recently – 7.5m journeys and earnings of £15.7m in both of the last two years.

On Manchester's **Metrolink**, figures are at an all-time high – 43.7m passenger journeys and 457.3m PKM.

The **Midlands Metro** climbed to a record 6.2m passengers in 2016/7 before dropping to 5.7m the following year: it then climbed to 5.9m. 2016/7's revenue was also at a record level of £10.3m: it dropped to £9.8m and was £10.7m in 2018/9. This gave a record high revenue/passenger of £1.81.

The **Sheffield** system has had peaks and troughs. In three years – 2008/9, 2010/1 and 2011/2 – journeys reached 15m: in 2011/2, revenue reached an all-time record of £15.4m. By 2014/5, passenger journeys had dropped to 11.5m: they climbed in the two successive years to 11.6m and 12.6m before dropping to 12.3m in 2017/8 and 11.9m in 2018/9. Revenue followed a similar trend, with the 2018/9 figure standing at £14m. The combination of revenue and passenger journey levels resulted in a record high level of revenue/passenger journey in 2018/9 of £1.18.

The **London Tramlink** system achieved record numbers in 2013/4 with 31.2m journeys. These peaked again in 2016/7 at 29.5m before dropping to 28.7m in 2018/9. Revenue was at a record high in 2016/7 (£25.5m): it has dropped to £23.5m in 2018/9.

New York Subway Punctuality Record

The Metropolitan Transportation Authority (MTA) announced an 81.5% on-time performance on the MTA New York City Transit's (NYCT) subway system in June, marking the first time the figure has been above 80% since August 2013.

Weekday major incidents decreased 27.4% compared to June 2018's level, dropping from 62 to 45. Weekday train delays fell nearly 46% from last June,

New York Subway near Queenborough Plaza

from 56,233 to 30,434, which was the lowest level of delays since September 2013.

Additional train time fell to 47 seconds, a drop of nearly 33% from last June, while customer journey time performance — the percentage of customers whose waiting and travel time is completed within five minutes of their scheduled journey — improved to 84%, the highest since this metric has been measured.

MTA officials cited fewer track debris fires as one factor in the reduction in delays. Such fires are down "significantly" since NYCT began using new equipment to address the problem in 2017.

Passenger Rail Complaints

At the end of June, ORR published its report on "Passenger Rail Service Complaints 2018-19 Q4 Statistical Release" (https://orr.gov.uk/__data/assets/pdf_file/0017/41336/passenger-rail-service-complaints-2018-19-q4.pdf).

A headline figure is that there were 30.1 complaints/100,000 journeys for franchised operators in 2018-19 as a whole, an increase of 2.8% on 2017-18. Clearly, figures for 2018-19 are likely to be high because of the May 2018 timetable problems affecting the Northern, Transpennine and Thameslink franchises. In fact it is the highest rate since 2012-13 (34.3). Since then, figures have been around 27 except in 2015-16, when it was 27.4. The figure in 2002-03 was 131.

Punctuality and reliability have improved over time, as has overall passenger satisfaction. Another reason for the reduction in complaints over time has been the use of social media – not included in the statistics. It is likely that some complaints have been taken 'off line' by the use of social media instead.

For Q4, 2018-19, there were 28.8 complaints/100,000 journeys on franchised passenger services. This is 6.6% less than the same quarter last year, and the lowest Q4 total since the series started in 1997-98. The figure for non-franchised services is 48.3/100,000, 43.7% down on last year's Q4.

Grand Central had the highest complaints rate in 2018-19, with 244/100,000 journeys (up 28 on the previous year): Virgin West Coast followed with 163 (up 1!). Hull Trains and the Caledonian Sleeper both attracted 152: Heathrow Express was down 8 at 27 (14th of 23 operators). For the January – March quarter of 2019, Virgin West Coast was top at 153, Grand Central second at 139, LNER 3rd at 130, Hull Trains 4th at 128 and Caledonian Sleeper 5th at 115: these were the only operators with over 100 complaints/100,000 journeys. Heathrow Express scored 10, third from the bottom (above London Overground and TfL Rail).

Heathrow Express was 5th lowest in terms of complaints about train quality (7.1% of complaints).

Overall, there were 1.49 items of correspondence relating to praise for every 100,000 journeys – although Heathrow Express does not report its statistics on this, affecting the total. Heathrow Express apart, the top 5 were Caledonian Sleeper (70/100,000 journeys), Hull Trains (18), LNER (12), Virgin West Coast (10) and Grand Central (6).

Showing data like these normalised by using a rate/100,000 journeys should smooth out the impact of large and small operators (Thameslink sees 82m journeys/quarter, Grand Central and Hull Trains less than half a million). Even so, there seems to be something odd here. Small operators like Hull Trains and Grand Central regularly fight it out for top place in the NRPS satisfaction scores (in the latest survey, they recorded 90% and 89% of passengers scoring the service satisfactory or good). They are also in the top five for commendations. And yet both are in the top three for complaints.

Curious!

Spring 2019 NRPS

The Spring National Rail Passenger Survey results were published recently, showing the level of satisfaction of a statistically significant number of passengers with a large number of aspects of their journey on the different train operators in Great Britain.

Heathrow Express was top of the overall satisfaction league, with 95% of passengers reporting 'satisfied' or 'good' when asked about their overall journey. Hull Trains and Grand Central, the usual competitors for top spots, recorded 90% and 89% respectively: Gatwick Express recorded their highest ever score of 89%.

Looking at the scores of over 94%, on the entire GB rail network there were five combinations of train operator and aspects of journey where over 94% of passengers recorded a satisfied or good result. Four of these were on Heathrow Express.

Looking at Heathrow Express's results, nothing particularly stands out – a few aspects have drifted up and a few down in customer satisfaction, but nothing major. Satisfaction with toilet facilities at stations dropped from 74% to 70% - slightly bizarre, since the ones at Paddington have been free to use since January. Satisfaction with connections to other forms of transport has gone up from 87% to 92% - again odd, because nothing's changed. Satisfaction with upkeep and repair of the train has dropped from 96% to 90% - the class 332s are showing their age and will be replaced soon. Satisfaction with the availability of staff on the train has dropped from 77% to 73%: now that is understandable. From February (the period covered by the survey) on-board staff now only really cover the first class section of the train: they no longer check other tickets since all stations are gated.

Gatwick Express has shown improvements in a number of areas. Satisfaction with the upkeep of the station buildings has gone up from 66% to 72% and with station cleanliness from 66% to 75%. Satisfaction with the provision of shelter on stations has increased from 75% to 81% and with the availability of seating at stations from 37% to 54%. Satisfaction with station staff has increased from 77% to 89%. Looking at the trains, satisfaction with upkeep and repair of trains has increased from 83% to 89%, and with the provision of information on trains from 78% to 84%. Satisfaction with luggage space has increased from 51% to 60% without, as far as I am aware, there being any change. Satisfaction with the gap between train and platform has increased from 61% to 73% - again with no significant physical change. Satisfaction with personal security on board has improved from 73% to 83%.

Heathrow Express may need to work to ensure that it keeps its high position, especially since its new trains are effectively the same as the Gatwick Express ones. An interesting figure is that of satisfaction with value for money: the difference between the figure for the two companies has fluctuated between 5% (2015/6) and 20% (Autumn 2016 and Spring 2018). In Autumn 2018 the difference was 10%: in Spring 2019 it was just 1%.

Air

Chinese Airport Statistics

The Civil Aviation Administration of China publishes an annual statistics bulletin and 'Statistics of key performance indicators', usually in April (although I couldn't see the 2018 issue).

For each of China's 229 commercial airports, the latter publication shows passenger numbers, cargo and mail tonnages and air traffic movements for the latest and preceding year. The sort order is passenger numbers
.
The statistical bulletin gives more chat about aviation.
http://www.caac.gov.cn/en/

Gatwick

Ivy Holdco Ltd., owner of Gatwick airport, recently produced its annual report for the year to 31 March 2019.

Passenger numbers were 46.442m, up from 2018's 45.693m. Air transport movements (ATM) were up from 280,792 to 281,741. Passengers/ATM were up from 162.7 to 164.8: seats/ATM were up from 187.4 to 191.0.

European passenger numbers (including domestic and the Channel Islands) were down from 37.2m to 36.6m, mainly because of the collapse of Monarch Airlines: while the available slots were used for some of the time, aircraft used were smaller than Monarch's A321s. Long haul traffic was up from 7.7m to 8.8m passengers, largely because of an increase in North American traffic (3.9m to 4.6m). This was driven by increased flights by Norwegian.

Gatwick has a 27% share of the London market (across the four main airports).

70% of flights left no later than 15" after scheduled departure time – this was in line with previous performance.

Retail income/passenger continued to grow, to £4.12 (up from £3.88). Parking profit/passenger was £1.49, the same as last year. This was a result of the decline in the resident non-transfer market. Parking income grew from £87.8m to £88.3m: parking expenditure dropped from £19.5m to £19.1m.

Recent Airline Statistics

Canadian low-cost carrier **WestJet** recently reported Q1, 2019 figures. Cumulating these to a four-quarter moving total showed a mix of trends.

Revenue was high, at C$4799m. It was C$4029m in the year to Q4, 2015 when my series started: it dropped in the next two 4-quarter periods but has climbed steadily since then. Revenue passenger miles are at a high of 27,945m, up from 21,526m at the

Westjet Boeing 737-700 at Toronto

start of the series. Available seat miles are also at a record high.

Passenger numbers, at 25.7m, are also at a record high, up from the 20.3m at the start of the series.

Revenue/passenger was C$199 at the start of the series: it dropped steadily to C$184 in the year to Q3, 2018. Since then it has climbed up to C$187. Revenue/passenger-mile is also slowly climbing from a low of C$0.164 in the year to Q4, 2016: at C$0.172 it is still well below the C$0.188 at the start of the series.

Average journey length has fluctuated – 1061 miles at the start of the series, up to 1147 in Q4, 2016 then down to 1078 in the year to Q3, 2018. It is now at 1088.

Air Canada reported some good financial and statistical results for Q1, 2019.

Revenue was at a high of C$18,447m as were passenger miles at 93,213m: available seat miles were also at a record high of 112,020m.

Passenger numbers were above 50m for the third consecutive 4-quarter period, at a record high of 51,281,000. Revenue/passenger was at a record high, just short of C$360: revenue/passenger mile was at C$0.198. In the year to Q4, 2015, this was C$0.205: it dropped to C$0.1899 in the year to Q2, 2017 and has climbed steadily since. Finally, average length of passenger journey has increased in every 4-quarter period: at the start of the series it was 1642 miles and it's now 1818.

An interesting contrast with WestJet!

Recent IATA Statistics

In early July, IATA released their **Air Passenger Market Analysis** for May.

Industry-wide revenue passenger kilometres (RPKs) continued to show solid growth in May, increasing by 4.5% in year-on-year terms. However, the trend rate of growth has clearly slowed over recent months.

With capacity increasing by a moderate 2.7% over the past year, the industry-wide load factor was at a new record high for May. All regions with the exception of the Middle East set new record levels.

International RPK growth moderated slightly this month, driven by slower growth in the developed markets of Europe and North America. Middle East airlines have reduced international capacity by 6% over the past year.

Industry-wide RPKs were marginally higher in May, up 4.5% in year-on-year terms. This is a solid outcome, following the short-lived dip in activity in March – where RPK growth eased to 3.1% year-on-year, in part due to the changed timing of Easter – but it remains below the long-term (20-year) average rate of around 5.5%.

Record Number of Flights in Europe
Source: Airport Regions Conference

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Traffic continues to rise steadily across Europe's skies.

The total number of movements handled across the European aviation network overseen by the Eurocontrol Network Manager hit a new high on Friday, 28 June with 37,228 flights over the course of the day. This broke the previous traffic record of 37,101 flights which was set on Friday 7 September 2018.

The Fastest Airline is Southwest
From Forbes

In the US, a flight can touch down up to 15 minutes late and still be considered by the Department of Transportation (DOT) to have arrived on schedule.

Southwest Airlines is the leader in actually getting travellers from point A to point B in the shortest amount of time, according to a report by Forbes.

Southwest Airlines Boeing 737 at Washington Dulles

Rather than looking at DOT "on-time" data, Forbes and consultant Aerospace Engineering and Research Associates graded airlines on how close they came to matching ideal "block times" for flights – the time elapsed between airliners releasing their brakes upon takeoff and applying them when landing.

The study found that Southwest flew routes an average of just 12.5 minutes over the minimum achievable block time on flights in 2018, an industry best, even though Southwest was only placed fifth among US airlines in DOT's on-time rankings for that year.

Southwest's operation efficiency and willingness to allow pilots to increase airspeed in order to keep flights on time were credited for allowing the airline to stick close to block times on flights.

Other carriers, like Alaska Airlines, performed less well because of inefficient airports that frequently forced flights into holding patterns due to congestion at their gates.

Apparently between 1986 and 2016, the scheduled flight time between New York's LaGuardia airport and Miami increased by 40 minutes, to 198 minutes. Minimum block time was 164 minutes. Flight times ranged from 172 minutes (Frontier Airlines) to 192 minutes (American Airlines).
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Vienna Airport Traffic

Vienna Airport's Control Tower and Station

Vienna airport shows some interesting traffic trends.

From 2006, passenger numbers have gone up almost every year (they dropped in 2009 and 2013). In 2018 they handled a record 27 million.

In 2006, about a third of them were transfer passengers – they did not have Vienna as an origin or destination. This percentage has dropped pretty steadily, to 25% in

2018.

So as passenger numbers increased, transfer passenger numbers remained steady (between 5.7m and 7.1m).

This presumably reflects Vienna's declining attractiveness as a hub, particularly now that Austrian Airlines is a Lufthansa subsidiary.

Sea

Port Authority of New York and New Jersey Improvements
From Progressive Railroading

The Port Authority of New York and New Jersey (PANYNJ) recently announced the completion of the ExpressRail Port Jersey facility, the final piece of the port's intermodal rail network spanning facilities in Elizabeth and Newark, New Jersey, and Staten Island, New York. Opening the Express Rail Port Jersey intermodal facility allows the port to advance its five-year goal to handle more than 900,000 rail lifts a year — the equivalent of 1.5 million fewer truck trips travelling through local roads.

The rail facilities were designed to reduce the port's historical heavy reliance on trucks to transport cargo and expand its geographic cargo reach to inland hubs. Trucks still account for moving 85% of all containers on and off port terminals today.

In addition to the $1.7 billion Bayonne Bridge project and the $600 million in port rail network investment, the port has also deepened harbour channels to 50 feet, rebuilt wharves and berths, enhanced its internal road network and installed improved security systems and infrastructure. As a result of those investments, PANYNJ is

poised for the first time in at least 20 years to overtake the Port of Long Beach in California as the nation's second-busiest port. Between January and April, PANYNJ saw 1,690,214 loaded 20-foot equivalent units (TEUs) compared to the Port of Long Beach's 1,669,440. PANYNJ surpassed Long Beach in volume of both loaded imports (1,203,674 TEUs) and loaded exports (486,540 TEUs).

Record Year for Port of Los Angeles

The Port of Los Angeles moved 9,688,252 twenty-foot equivalent units (TEUs) in fiscal-year 2019, a 5.7% increase from the previous year. The fiscal year, which ended June 30, was the busiest 12-month period in the port's history.

June 2019 imports increased 3.5% to 396,307 TEUs compared with June 2018's level.

Exports decreased 5.6% to 139,318 TEUs, while empty containers increased 19% to 229,153 TEUs.

Combined, June overall volumes were 764,777 TEUs, a port record for the month.

Stranded Assets?

If we are to meet our obligations under climate change agreements (and, as a non-trivial by-product, leave behind an atmosphere our grandchildren can actually breathe), before long we need to stop burning coal, oil and gas. The amount which can reasonably safely be burnt has been calculated – and that is less than the total amount of reserves in the ground owned by oil and gas companies and recorded in their accounts as assets. The difference between what they've got and what we can safely use is therefore useless – we can't safely use it, so there's no point in having it. Those excess reserves are known as stranded assets.

This has been known about for a while.

However, there is another category of stranded asset which has recently come to light – oil tankers. If we stop burning oil, we don't need to carry it half way round the world in tankers – so we don't need tankers.

A recent report in the Financial Times noted research by Maritime Strategies International: under the most extreme forecast demand for tankers could drop by 30% after 2025. This followed a drop in demand for oil, coal and liquefied natural gas (LNG) from 5.5bn tonnes in the early 2020s to 3.7bn by 2045. This could result in a 30% decrease in the world's tanker fleet (big owners are Frontline, DHT Holdings and Euronav, but some oil companies own their own fleets). The value of the world's tanker fleet could drop from $160bn in 2018 to $114bn by 2045. A new tanker typically costs $92m; it could lose 50% of its value over the next decade, making debt servicing difficult.

About 28% of seaborne trade is in oil, with a further 12% in coal and LNG. While bulk carriers used for shipping coal can be used for other products, oil tankers cannot.

Stranded assets indeed.