



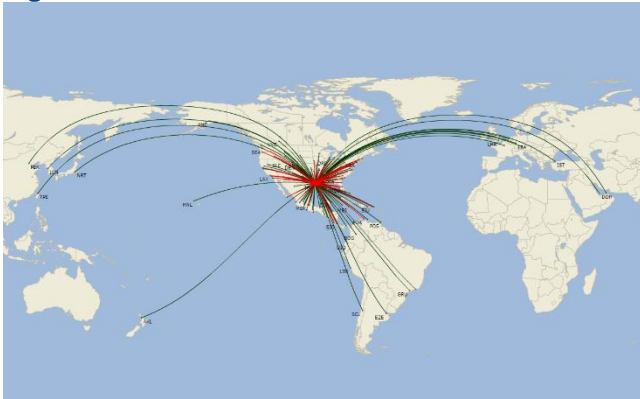
## Assessment of Hurricane Harvey's impact on aviation

- It is estimated that almost 110 thousand passengers per day were affected by Hurricane Harvey (around 3% of total passengers flying in the United States).
- IAH and HOU were the most impacted airports: airlines are estimated to have lost around US\$30-35m a day in passenger revenues. Given that IAH is a major freight hub, air cargo operations will also have been disrupted.
- We estimate that the spike in jet fuel prices following the shutdown of oil refineries post-Harvey will add around US\$350-400m (+0.3%) to the industry's 2017 fuel bill. Other impacts, including on Texan tourism, are more uncertain.

### Hurricane impact centered on Southern Texas area

- On Thursday the 24<sup>th</sup> August 2017, Hurricane Harvey reached the US southern coast and hit several states. Texas was the most affected area, with Houston's main airports forced to close up until the end of the month.

**Figure 1 – IAH, HOU scheduled network**



- The largest airports to be affected were the George Bush International Airport (IAH) and the William P. Hobby Airport (HOU). Passengers flying from IAH and HOU represent around 3.2% of total US passengers. Other airports such as Dallas/Fort Worth International Airport (DFW), Dallas Love Field Airport (DAL) and Austin-Bergstrom International Airport (AUS) experienced minor disruptions, but their operations were never totally shut down.
- In terms of revenue losses, the airlines likely to have been hit hardest are those operating IAH and HOU as main hubs (i.e. United and Southwest airlines). Based on data from PaxIS+, and including connecting passengers who may have been affected, it is estimated that the closure of these two airports may have resulted in around US\$32m revenue losses per day to the industry. Disruptions at secondary airports were smaller. However, in addition to revenue losses, airlines are likely to have faced higher costs too, including passengers' re-accommodation, flights diversions and cancellations.

### Harvey's impact on jet fuel prices in the region

- One immediate and widespread impact of Hurricane Harvey was on jet fuel prices in North America. Reports indicate that more than 20% of crude oil refining capacity in the US was partially shut down in late-August because of Harvey, and such closures resulted in temporary spikes of refined oil price, including gasoline and jet fuel.
- This impact on jet fuel prices has been just temporary: the cost of jet fuel in North America has already started to decline as refining capacity has been restored. Nonetheless, we estimate that the cumulative impact of the spike in jet fuel prices in the Americas over the past four weeks has added around US\$350-400 million to airlines' costs. All told, this is equivalent to adding around 0.3% to the industry-wide fuel bill in 2017.

### Other effects of Harvey on aviation

- Given that IAH is a major freight hub, air cargo will have been disrupted by the airport's closure too. Based on data from the US Census Bureau, IAH handles almost 2.5% of total US trade by air in weight terms, which translates into around US\$14.2bln of goods each year. As a result, every day that IAH was closed it would have affected around US\$39m of air cargo. However some goods may have been diverted to other less-affected airports so the net disruptive impact of Hurricane Harvey may have been less than this.
- Texas also has a large tourism industry which has seen disruption; resorts located on the Gulf of Mexico including those in the Corpus Christi area were strongly hit by the hurricane. Direct travel spending in Texas was estimated at US\$68.7bln in 2015, with Texas accounting for around 5% of total visitor arrivals to the US. However, at this stage, the long-term effects of Hurricane Harvey on Texan tourism are unclear.
- You can read additional analysis of the impact of shock events on aviation by IATA Economics [here](#).

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