

RELIABILITY OF JOURNEYS ON HIGHWAYS AGENCY'S MOTORWAY AND 'A' ROAD NETWORK: THE 'ON TIME' RELIABILITY MEASURE

METHODOLOGY CHANGES MARCH 2013 - Q&A

1. What changes have you made to the On Time Reliability Measure (OTRM)?

The main change is that journey times are now estimated using in-vehicle GPS data only. Previously, journey times were also estimated using Automatic Number Plate Recognition (ANPR) cameras and inductive loops built into the road surface.

Other, more minor, changes include improvements to imputation methods and the accuracy of roadworks information used to derive these statistics.

2. Why did you make these methodology changes?

The methodology changes were made to improve the quality of the reliability measure. The main improvement in quality is that performance on different sections of network and on individual road sections over time will be more comparable because it is derived using the same data source. Further quality assurance work will be undertaken over the coming months to assess the suitability of the sub-national data as official statistics.

The change to improve the previous imputation method uses more data from individual road sections rather than a national average to impute for missing values. This will also improve reliability estimates for individual road sections.

The accuracy of roadworks information has been improved by taking a more up to date extract from Highways Agency systems. Again, this will improve reliability estimates for individual road sections in particular.

3. Does this mean the OTRM statistics are more robust?

We continue to be confident that the reliability statistics are robust and provide a true reflection of how journey reliability has changed at a national level.

The implemented methodology changes allow more robust comparisons between links and for individual links over time.

4. When were the changes made and to which periods?

Reliability performance based on the implemented methodology was first published for data to January 2013 on 14 March 2013. A revised historic data series back to April 2010 was published on the same date.

5. Why has the amount of imputed data used to measure reliability performance increased?

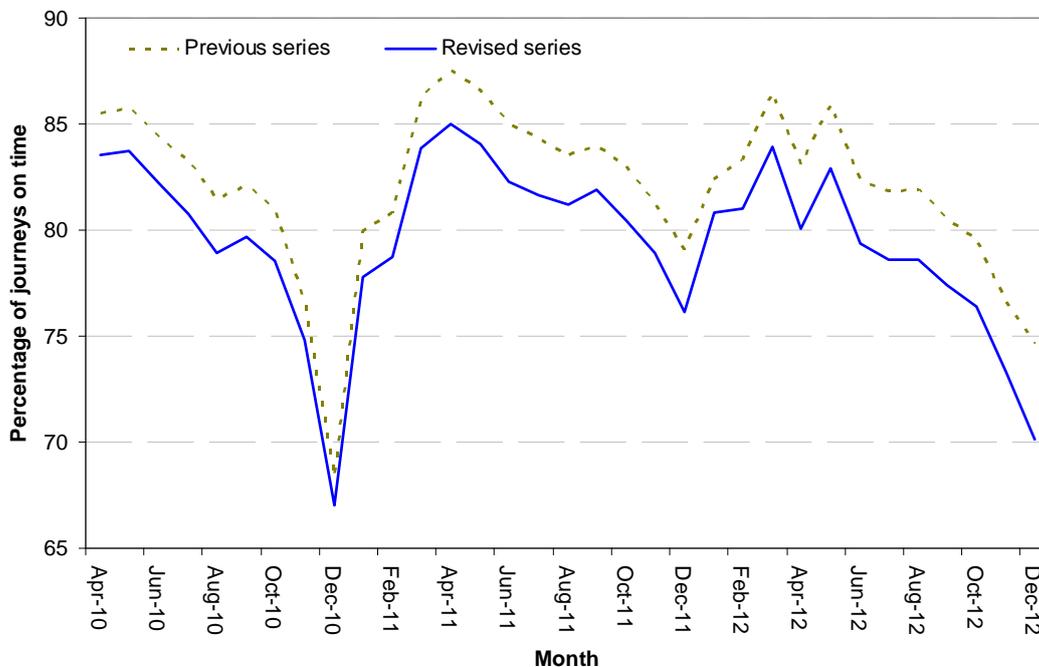
The amount of imputed data has increased, because we are now only using the GPS source to estimate journey times and we no longer use journey time estimates based on a single vehicle observation. However, imputed estimates will now be of a higher quality because of changes to imputation methods. Imputed estimates will now be primarily based on performance at a link level for individual months. National level estimates will continue to be used to impute for missing values on road sections with very little observed data.

6. What impact have the changes had on performance?

The revised estimates are now typically two to three percentage points lower than they were previously. Because of the shift in national journey time reliability estimates, we have published adjustments to the historic national series so that users have a reliability time series on a consistent basis back to April 2010.

The chart below shows the revised monthly national series compared to the previous series. It can be observed that following the implementation of the methodology changes, trends in national reliability over time are very similar to those previously presented.

A comparison of the revised series for reliability on the Highways Agency's network with the previous series, by month from April 2010 to December 2012



7. Why has the performance series changed in this way?

The main reason reliability estimates have changed in this way is due to the move to using the GPS data source only. Whilst the GPS data source has excellent geographical coverage, journey time estimates are generally based on lower sample sizes, increasing the variability of journey time estimates leading to a small decrease in reliability performance at a national level. In addition, a higher proportion of journey time estimates (where sufficient vehicles are observed) will relate to busier times and locations than they did previously. These busier times and locations are likely to have lower reliability levels, leading to a small decrease in reliability performance at a national level.

8. Does this mean that you were over estimating reliability levels on the strategic road network previously?

No, reliability estimates will be dependent on the methodology and sources used to make those estimates. It should also be noted that trends in reliability levels over time following the methodology changes are generally consistent with those observed previously.

9. Where can I find out more information on the new methodology?

More detail on the methodology now used to produce the reliability statistics is provided in updated technical guidance at:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/51127/Methodology_for_calculation_of_reliability_on_Highways_Agency_s_motorway_and_A_road_network.pdf