New York Metroplex Airspace Study
February 2018

Purpose:

ATH Group's 2008 analysis quantitatively measured congestion in the New York Metroplex and evaluated possible solutions to eliminate airborne delay within the NY airspace.

Summary:

Using ATH Group's Flow Management solution to manage the arrival flows (starting at 2 hours prior to landing) and a precision spacing process within the terminal airspace (last 30 NM), the simulation efficiently removed all airborne delay and produced significantly better results than reduced separation or Constant Decent Approaches.

ATH Group's Flow Management solution used a max speed change of less than 18 knots, a max time change of less than 6 minutes and an average time change across all arrivals of 36 seconds.

Method:

ATH Group selected aircraft trajectory data for the NY area, using both good and bad weather days. ATH evaluated JFK, LGA, EWR and TEB arrival traffic, plus over flights.

First, ATH analyzed recorded aircraft trajectories to determine the amount of inefficiency routinely experienced in a "*typical*" day in the New York Metroplex, calculating actual excess distance flown, excess time and holds.

Next, ATH evaluated 3 separate enroute processes to alleviate this congestion and inefficiency. These techniques included:

1. Trajectory/time-based flow optimization using ATH Group's Flow Management solution
2. Reduced separation standards
3. Continuous descent approaches

For the 3 solutions evaluated, ATH replaced the terminal approach trajectory segment (last 30 NM) with a simulated time based solution.

Conclusion.

The inescapable conclusion of the study was that airborne congestion in the New York Metroplex can be completely alleviated by using a COTS, shovel ready system: **ATH Group's Flow Management solution using time based spacing**.

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It is very important to note that sequencing must be done "*holistically*". That is, the entire system of trajectories must be sequenced in real time and simultaneously, as is done by ATH Group's Flow Management solution. Flight by flight sequencing produces no significant results.

Further, the trajectory changes necessary to remove congestion are tiny; an average time change of 36 seconds per flight, with a max time change less than 6 minutes, that must be applied at the right time to the right aircraft.

Finally, ATH Group's Flow Manager solution has been independently validated by FAA, Embry-Riddle University, GE Aviation, Georgia Tech, Delta Air Lines and others. ATH Group's Flow Management solution is also supported by the Port Authority of New and New Jersey and operationally proven to reduce airspace complexity, excess distance, delays and fuel burn. ATH Group's Flow Management solution can be rapidly, and cost effectively deployed using existing procedures and equipment by either ATC or private industry.

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