Understanding how the 3Di score works

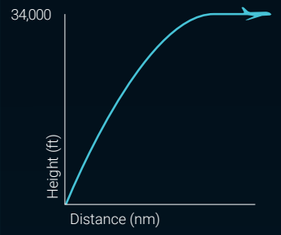
The ‘perfect flight’ is made up of six component parts—a continuous climb departure from the ground to the airlines’ requested cruise level followed by a continuous descent back to the ground, with minimal holding and the full profile taking the most direct route. Here is each element in more detail:

Vertical component

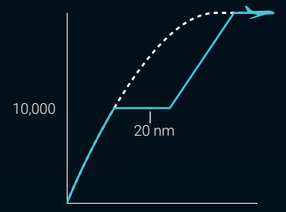
1. Climb

An aircraft is departing from an airport and aiming to reach cruise level as quickly and efficiently as possible. Any level flight in this phase, particularly at low altitudes where aircraft are less efficient, has a negative impact on its 3Di score.

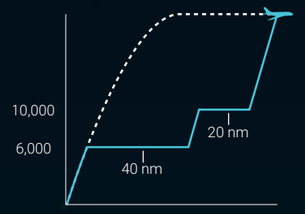
A continuous climb from ground to cruising altitude will provide a perfect 3Di score.



Periods of level flight negatively affect the score and are counted as inefficiency.



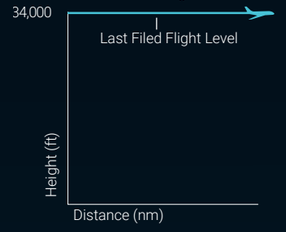
Level flight at lower altitude has a worse effect on the score than at a higher altitude.



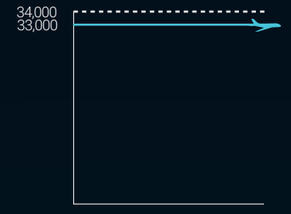
2. Cruise

Before an aircraft takes off the airline will submit a Filed Flight Level (FFL) for the flight during the cruise phase. Anything below the FFL results in a negative impact on its 3Di score. Exceeding the FFL does not improve the score, but will usually result in fuel savings.

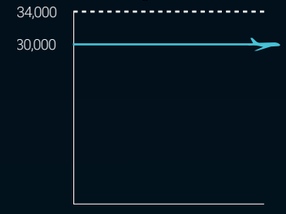
Achieving airlines last FFL results in a perfect 3Di score for this phase of the flight.



Time spent cruising below the FFL will negatively affect the score.



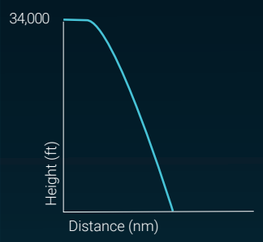
The 3Di score gets worse as altitude drops further below the FFL during cruise.



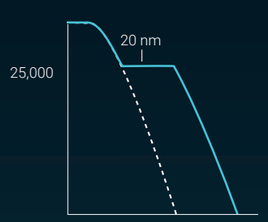
3. Descent

Similar to the climb phase but in reverse, a more continuous descent from cruise to landing will result in a better 3Di score. Keeping an aircraft higher for longer helps improve it’s efficiency and the gradient of descent does not affect the score, only periods of level flight.

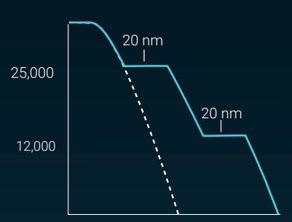
A continuous descent from cruise to the ground will result in a perfect score for this phase.



Periods of level flight negatively affect the score and are counted as inefficiency.



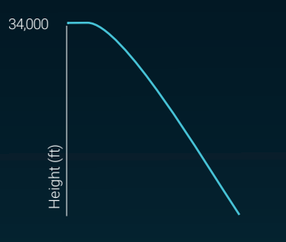
More time spent level and the lower down in the descent it takes place will result in a bigger impact on 3Di.



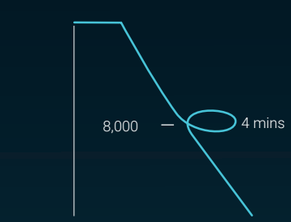
4. Holding

Holding occurs when an aircraft has to wait for a landing slot to become available at an airport. Holding causes both vertical and horizontal inefficiency in flight so it has a big impact on the 3Di score. The more time spent in a hold, the worse the 3Di score.

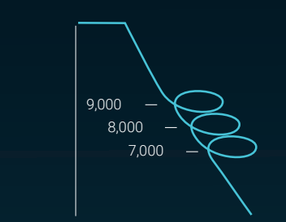
A perfect continuous descent results in a perfect 3Di score.



If an aircraft has to hold, higher is better for efficiency and this will minimise the impact on the score.



More time spent holding at lower altitude is even worse for the 3Di score.

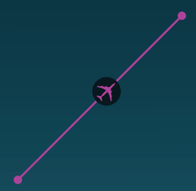


Horizontal component

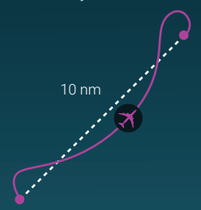
5. Horizontal track–flight information region (FIR)

Between airports aircraft have to manoeuvre through other air traffic to reach their destination. This usually means a ‘great circle’ route is taken in the safest and most direct way possible from airport to airport. Flight plannable direct routes have the best effect on the 3Di score.

Direct routes from origin to destination result in a perfect 3Di score for this element of the flight.



Any deviation from the ‘great circle’ direct route would count as inefficiency.



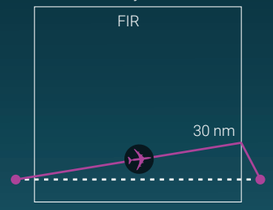
3Di score gets worse as the aircraft covers more track mileage further away from the ‘great circle’ route.

6. Horizontal track–whole flight

Aircraft entering or exiting airspace at the most direct point to their onward route can have a positive impact the 3Di score. Aligning these entry/exit points with the overall ‘great circle’ route reduces track mileage incurred over the whole flight.

Providing a direct route in or out of UK airspace will result in a perfect 3Di score for this element of flight.

Additional track milage flown away from a direct route counts as inefficiency.



3Di score gets worse the further away from the most direct route in or out of the FIR.