

Main ETOPS data

Once you have your ETOPS out from a flight planning software like PFPX or SimBrief you should end up with the following data:

Departure airport ETOPS entry airport ETP ETOPS exit airport Destination airport
The departure airport is your departure airport
The ETOPS entry airport is an ETOPS-suitable airport, which will be the airport to re-route to during the first part of the ETOPS section of the flight
The ETP is the Equal Time Point, passed this point, you will re-route to the ETOPS exit airport and not to the ETOPS entry Airport
The ETOPS exit airport is an ETOPS-suitable airport which will be the airport to re-reroute to during the second part of the ETOPS section of the flight
The destination is your destination airport

You will enter this data in the given order below into your second route (RTE2) of your Flight Management Computer.

Note that there has to be a discontinuity between Departure airport and ETOPS entry airport, and another discontinuity between ETOPS exit airport and Destination airport to prevent the route to be shown entirely.

ETOPS Entry / Exit point

The ETOPS entry / exits points are different from the ETOPS entry / exit airports. The ETOPS entry point is located 60 minutes of flight away from your ETOPS entry airport. The ETOPS exit point is located 60 minutes of flight away from your ETOPS exit airport. Between those points, you will be in the ETOPS section of your flight. To show these points draw fixes at your ETOPS entry / exit airports with a distance of 60 minutes of flight. You can find the distance corresponding to 60 minutes of flight for your aircraft on the table below.

Maximum distance from ETOPS airports

Then, you will have to set two other fixes at your ETOPS entry / exit airports. They should have a distance of the maximum distance that can be covered by your aircraft in the number of minutes it is allowed to fly according to its ETOPS rule.

The table of ETOPS categories is, in 2018, as following:

ETOPS 180 min. aircrafts	ETOPS 240 min. aircrafts	ETOPS 330 min. aircrafts	ETOPS 370 min. aircraft
Airbus A320 Family Boeing 737 Boeing 757 Boeing 767	Airbus A330	Boeing 777 Boeing 787	Airbus A350 XWB

Then you need to calculate the distance that you can cover with your aircraft in the amount of time it is authorized by its ETOPS rules. Here is a typical aircraft speeds table with data found over the internet:

Aircraft	Distance in 60 minutes	Aircraft	Distance in 60 minutes
Airbus A320 Family	405 nm	Boeing 737	407 nm
Airbus A330	434 nm	Boeing 787	445 nm
Airbus A350 XWB	443 nm	Boeing 777	434 nm
Boeing 757	457 nm	Boeing 767	425 nm

For example, with the Boeing 777, you can be 330 minutes away from an airport. Knowing that you do approximately 434 nm within 60 minutes, you end up with this formula:

$$Distance = \frac{330}{60} \cdot 435 = 2392.5$$

Which means that you can cover 2392.5 nautical miles in 330 minutes. The maximum distance you can be from your ETOPS entry / exit airports is thus 2392.5 nautical miles. Draw a fix of 2392.5 nautical miles at your ETOPS entry airport and another one of the same distance at your ETOPS exit airport.

Useful links

- Wikipedia ETOPS page: <https://en.wikipedia.org/wiki/ETOPS>