

Equal Time Point Calculation

Total Divert Distance _____	Altitude	True Airspeed	Wind Factor	Ground Speed	Gsp Rtn + Gsp Cont	ETP NM From Coast Out Divert
Return (rtn)						
Continue (cont)						

Utilizing a Calculator

Total distance X GS rtn = _____

_____ divided by (GS rtn + GS cont) = _____ NM ETP

Identify the factors which will be used to calculate the ETP.

Step 1 Determine the total distance the planned route of flight requires between the two divert airfields

Step 2 Determine the altitude that the scenario requires. Typically a medical divert is at your cruise altitude, a engine inoperative divert would be at the altitude identified in the aircraft performance charts, and the medical divert would be at 10,000 feet.

Step 3 Determine the true airspeed appropriate for that altitude and condition

Step 4 Determine the composite wind factor for the route and altitude as a headwind or tailwind

Step 5 Calculate the groundspeed by adding or subtracting the wind factor from the true airspeed

Now you have all the information to begin determining the distance the ETP is located from the first divert alternate airfield.

Step 6 Multiple the distance from step 1 by the groundspeed to return.

Step 7 Add the groundspeed to return and the groundspeed to continue together

Step 8 Divide the sum of step 6 by the sum of step 7 for the ETP location in miles along your intended route from the coast out divert airfield.

Equal Time Points Considerations and Practices

Equal Time Points (ETP) A point on the route of flight where the flight time, considering wind, to each of two selected airports is equal. (AC 135-42)

Equal Time Points (ETPs) should be identified for a loss of pressurization, engine failure, and all engine cruise (Medical). A minimum acceptable fuel at the divert alternate should be identified in either time overhead, or quantity in pounds.

Should the distance between any two ETPs of the three ETPs be less than 100NM than a single ETP may be annotated on the route. When any two of the three ETPs are more than 100NM apart all three ETPs (engine failure, loss pressurization and medical) should be annotated on the route. (Best Practice/Technique)

When a single ETP (of the three conditions) is plotted the most fuel restrictive ETP is recommended. Should the fuel remaining at all the divert alternates be well in excess of the target fuel remaining the medical ETP may be annotated if considered appropriate. (Best Practice/Technique)

When an off route divert ETPs are identified in addition to a center ETP; and the center ETP is considered acceptable based on fuel and weather, then either the center ETP, or the off route ETPs may be plotted based on operator specific requirements (medical facilities etc..). Plotting a center ETP in addition to the two off route ETPs on plotting chart can cause confusion if not properly briefed.

When an off route divert is required (BIKF or LPLA), the weather during the time of possible use must be acceptable. Should the weather be below acceptable minimums than the flight should be rerouted.

Weather requirements for divert alternates from FAA AC 135-42 (Part 135) may be considered by General Aviation operators as a best practice and are identified below.

When a divert airfield has at least two separate and suitable runways with two separate NAVAIDs providing straight in instrument approaches, adding 200 feet to the DA/MDA and a ½ mile (or 800 meters) to the visibility for the highest approach minimums at the time of arrival should be considered.

When a divert airfield has only one suitable runway and/or only one NAVAID providing an instrument approach, adding 400 feet to the DA/MDA and a 1 mile (or 1600 meters) to the approach minimums at the time of arrival should be considered.