# Fuel Calculator Reference Guide

1. Calculation of Minimum Fuel Quantity (VFR):

- Basic Factor (BF) = 60 / Speed

- Time = Distance \* BF

- Fuel A to B = Time \* Fuel Consumption

- If Wind Speed ≥ 15 Kts, add 5% to Fuel A to B

- Reserve Fuel = 500 (day) or 600 (night)

- Startup and Taxi Fuel = 150

- Total Fuel Required = Fuel A to B\*2 + Reserve + Startup/Taxi

- Bingo Fuel = Fuel Entered - Total Fuel Required

- Endurance = Bingo Fuel / Fuel Consumption

2. Calculation of Minimum Fuel Quantity (IFR):

- Basic Factor (BF) = 60 / Speed

- Time A to B = Distance A to B \* BF

- Time B to C = Distance B to C \* BF

- Fuel A to B = Time A to B \* Fuel Consumption \* 1.05 (5% extra)

- Fuel B to C = Time B to C \* Fuel Consumption

- Reserve Fuel = 20 \* Fuel Consumption (if reserve < 30 min) or 30 \* Fuel Consumption

- Startup and Taxi Fuel = 150

- Total Fuel Required (MFQ) = Fuel A to B + Fuel B to C + Reserve Fuel + Startup/Taxi

3. Calculation of FUEL needed for the distance to reach the recovery point:

- Trip = Range \* 2

- Legs Time = Trip / Speed

- Flight Time = Legs Time + On-Site Time

- Fuel Needed = Flight Time \* Consumption Rate

- Q in Tanks = Fuel Needed + Reserve +(150lbs SUTTO)

4. Calculation of RANGE from the fuel quantity available in the aircraft:

- Usable Fuel = Q in Tanks – Reserve - (150lbs SUTTO)

- Flight Time = Usable Fuel / Consumption Rate

- Legs Time = Flight Time + On-Site Time

- Trip Distance = Legs Time \* Speed

- Range = Trip Distance / 2

5. Calculation of the Fuel Leak check:

- Total Fuel Consumption per Minute = (Engine 1 Consumption + Engine 2 Consumption) / 60

- Calculated Total Fuel Used = Total Fuel Consumption per Minute \* Time in Minutes

- Remaining Fuel = Total Fuel - Calculated Total Fuel Used

Additional calculations:

- Time to Fuel and NM:

Fuel = Time \* 20

NM = Time \* 2

- NM to Fuel and Time:

Fuel = NM \* 10

Time = NM / 2

- Fuel to Time and NM:

Time = Fuel / 20

NM = Fuel / 10

These formulas provide a comprehensive set of calculations for various aspects of flight fuel planning, including minimum fuel requirements for VFR and IFR flights, range calculations, and fuel leak checks. The calculations take into account factors such as distance, speed, fuel consumption rates, reserve requirements, and environmental conditions like wind speed and day/night operations.